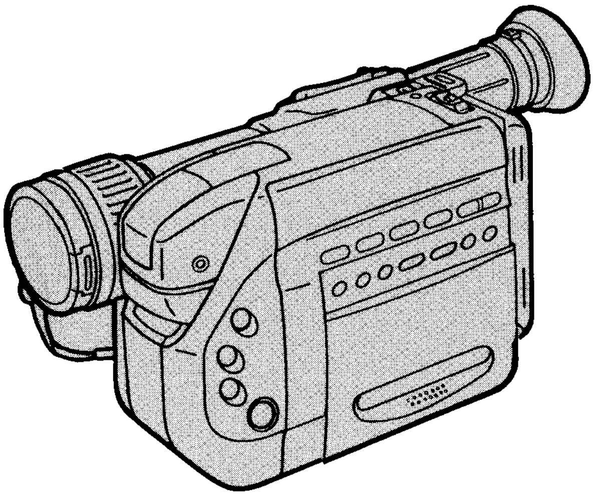
ORDER NO. VRD9109M152

Service Manual

General Description
Adjustment Procedures
Block/Schematic Diagrams
Exploded Views/Parts List

Panasonic VHS C
PAL
HQ
VHS-C Movie

NV-S5E/B/A/EC
NV-S500EN



SPECIFICATIONS

ITEM	SPECIFICATION
POWER	Source: DC 6.0V Consumption; Recording mode; 7.8W (Battery operation)
VIDEO RECORDING SYSTEM	4 rotary heads, helical scanning system PAL
TAPE FORMAT	VHS-C Cassette Tape (Tape width 12.7mm)
TAPE SPEED	SP mode: 23.39mm/s LP mode: 11.7mm/s Record/Playback Time: SP mode: 45min. with NV-EC45E LP mode: 90min. with NV-EC45E
CAMERA	PICK-UP ELEMENT: CCD (Charge Coupled Device)
	STANDARD ILLUMINATION: 1,400 lux
	MINIMUM REQUIRED ILLUMINATION: 3 lux
	LENS: 8 : 1 Power Zoom Lens with Digital AI Auto Focus, Auto Iris, Auto Focus System, F1.4 (6～48mm), Filter Diameter 37mm
	IMAGE SENSOR: 1/3 inch CCD Image Sensor
	VIEW FINDER: 2/3″ Electronic View Finder

ITEM	SPECIFICATION
VIDEO	HEADS: 4 rotary heads, 1 flging erase head
	OUTPUT: PHONO CONNECTOR; 1.0Vp-p 75Ω unbalanced
AUDIO	HEAD: 1 Stationary head (Normal Audio)
	OUTPUT: PHONO CONNECTOR; −8dB, 600Ω unbalanced
WEIGHT	Approx. 700g (without Battery Pack)
DIMENSIONS	100(W)×112(H)×194(D) mm
STANDARD ACCESSORIES	1 pc. AC Adaptor 1 pc. Battery Pack 1 pc. Cassette Adaptor 1 pc. Shoulder Strap 1 pc. AV Output Cable 1 pc. DC Input Cable 1 pc. Battery for Cassette Adaptor Operation 1 pc. Battery for Clock Operation 1 pc. Phono/BNC Plug (NV-S5B) 1 pc. RF Adaptor (NV-S5B/A, NV-S500EN) 1 pc. Soft Case (NV-S5B)

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

INTRODUCTION

This service manual contains technical information which will allow service personnels to understand and service the model.
Section 1 presents you with some general information of features and controls, enabling you to become familiar with each function.
Section 2 contributes to your mechanical and electrical adjustment as well disassembly and replacement procedures.
In the case of very common information relating to other models like mechanical adjustments, please refer to each service manual.
Section 3 contains block diagrams which offers you information for checking and understanding each circuit. Schematic diagrams which give you detailed information such as waveforms, voltage data, function e.t.c ...
Section 4 contains exploded views and parts list.
Please place orders using the parts list and not the drawing reference numbers.
If the circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original service manual.

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Technical Information

Service caution

1. Adjustment the Camera Section.

In the camera section EEPROM(Electric Programmable Read Only Memory) is adopted as adjustment element instead of conventional variable resistor.
EEPROM memorize the adjustment value as digital data and data to D/A (Digital to Analogue) converter to be changed DC voltage which is supplied to adjustment point as shown in Fig. T1.
Thus, when adjusting the camera process it is necessary to change the adjustment data which is stored in EEPROM. For this prupose, EVR(Electric Variable Resistor) Fixture enables to communicate with EEPROM directly and can change its stored adjustment data.

The EVR Fixture is connect with camera as shown below and is used. (For more details, Please refer to Camera adjustment section.)

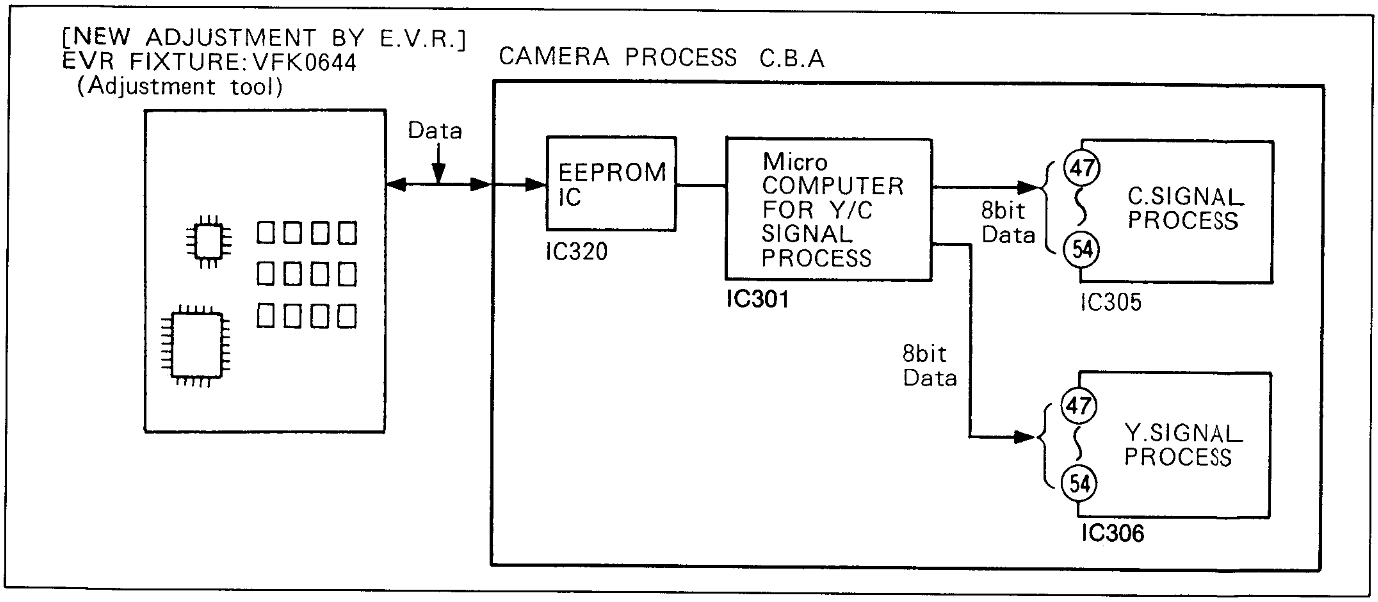

[NEW ADJUSTMENT BY E.V.R.]
EVR FIXTURE:VFK0644
(Adjustment tool)
CAMERA PROCESS C.B.A
Data
EEPROM
IC
IC320
Micro
COMPUTER
FOR Y/C
SIGNAL
PROCESS
IC301
8bit
Data
47
54
C.SIGNAL
PROCESS
IC305
8bit
Data
47
54
Y.SIGNAL
PROCESS
IC306

Fig. T1

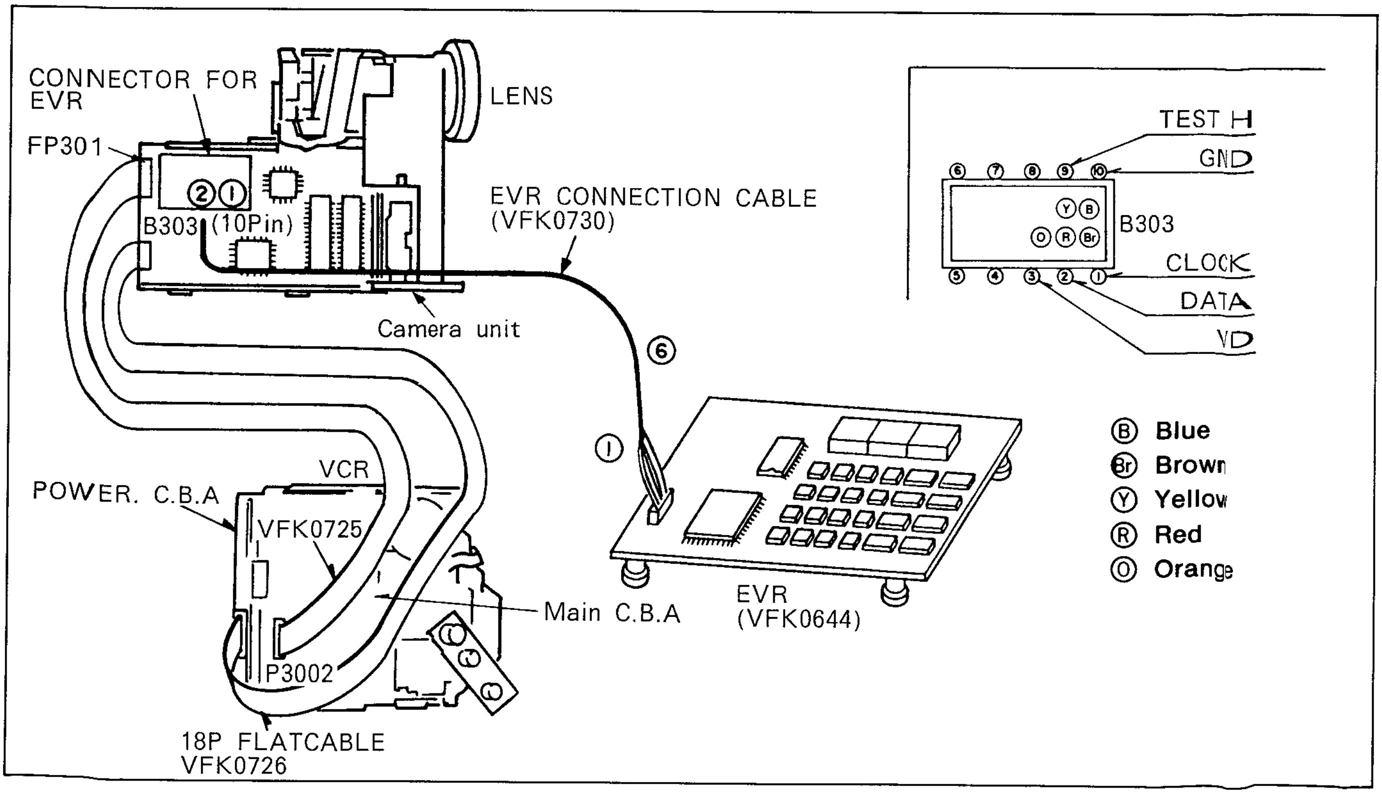

CONNECTOR FOR
EVR
FP301
LENS
B303
(10Pin)
2
1
EVR CONNECTION CABLE
(VFK0730)
Camera unit
6
1
VCR
POWER. C.B.A
VFK0725
P3002
Main C.B.A
EVR
(VFK0644)
18P FLATCABLE
VFK0726
TEST H
GND
6 7 8 9 10
Y B
O R Br
B303
5 4 3 2 1
CLOCK
DATA
VD
B Blue
Br Brown
Y Yellow
R Red
O Orange

Fig. T2

2. Service Extension Cable.

Use following Extension Cable when checking or adjusting the individual circuit board assembly (C.B.A.) of video part or camera part.

No.	PART NBR	PART NAME	CONNECTION	Q'TY
1	VFK0686	17 PIN EXTENSION CABLE	MAIN C.B.A. P6103~VTR OPERATION P6302	1
2	VFK0723	22 PIN EXTENSION CABLE	MAIN C.B.A. P6201~DRIVE C.B.A. P2001	1
3	VFK0724	32 PIN EXTENSION CABLE	MAIN C.B.A. P6002~POWER C.B.A. P6501	1
4	VFK0725	18 PIN FLAT CABLE (2)	MAIN C.B.A. P3002~PROCESS C.B.A. FP301	1
5	VFK0726	18 PIN FLAT CABLE (WHITE)	MAIN C.B.A. P1001~SENSOR C.B.A. FP203	1
6	VFK0727	16 PIN FLAT CABLE	MAIN C.B.A. P6003~CHASSIS	1
7	VFK0729	6 PIN FLAT CABLE	MAIN C.B.A. P6004~CHASSIS	1
8	VFK0728	9 PIN FLAT CABLE	MAIN C.B.A. P4002~AC HEAD	1
9	VFK0667	30 PIN EXTENSION CABLE	PROCESS C.B.A. B302~SENSOR C.B.A. B202	1
10	VFK0724	32 PIN EXTENSION CABLE	PROCESS C.B.A. B301~SENSOR C.B.A. B201	1

3. How To Use Extension Cables.

(1) Connection between Main C.B.A., PROCESS C.B.A and VTR operation C.B.A

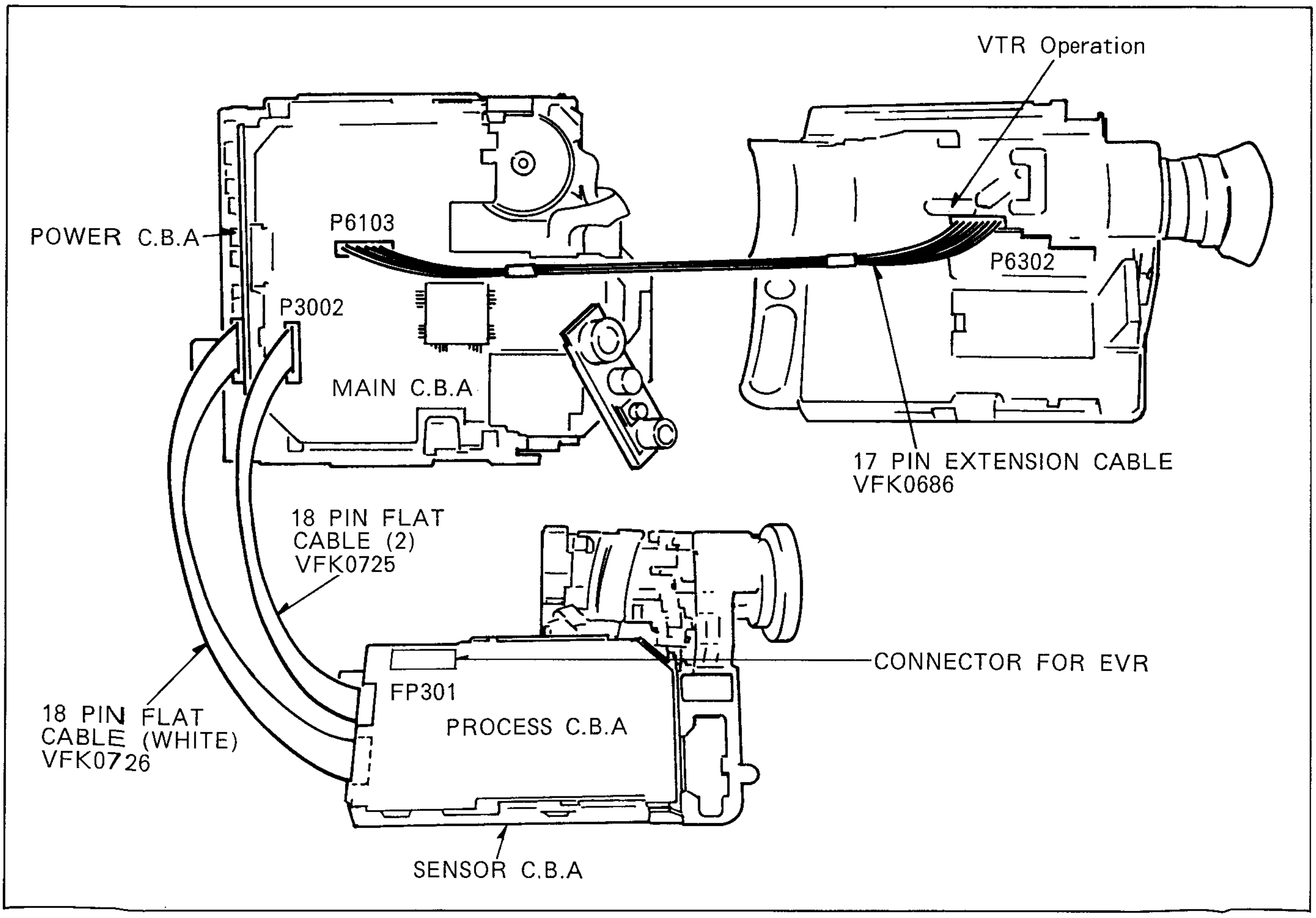

VTR Operation
POWER C.B.A
P6103
P3002
MAIN C.B.A
P6302
17 PIN EXTENSION CABLE
VFK0686
18 PIN FLAT
CABLE (2)
VFK0725
CONNECTOR FOR EVR
FP301
PROCESS C.B.A
18 PIN FLAT
CABLE (WHITE)
VFK0726
SENSOR C.B.A

Fig. T3-1

(2) Connection between Main C.B.A and chassis

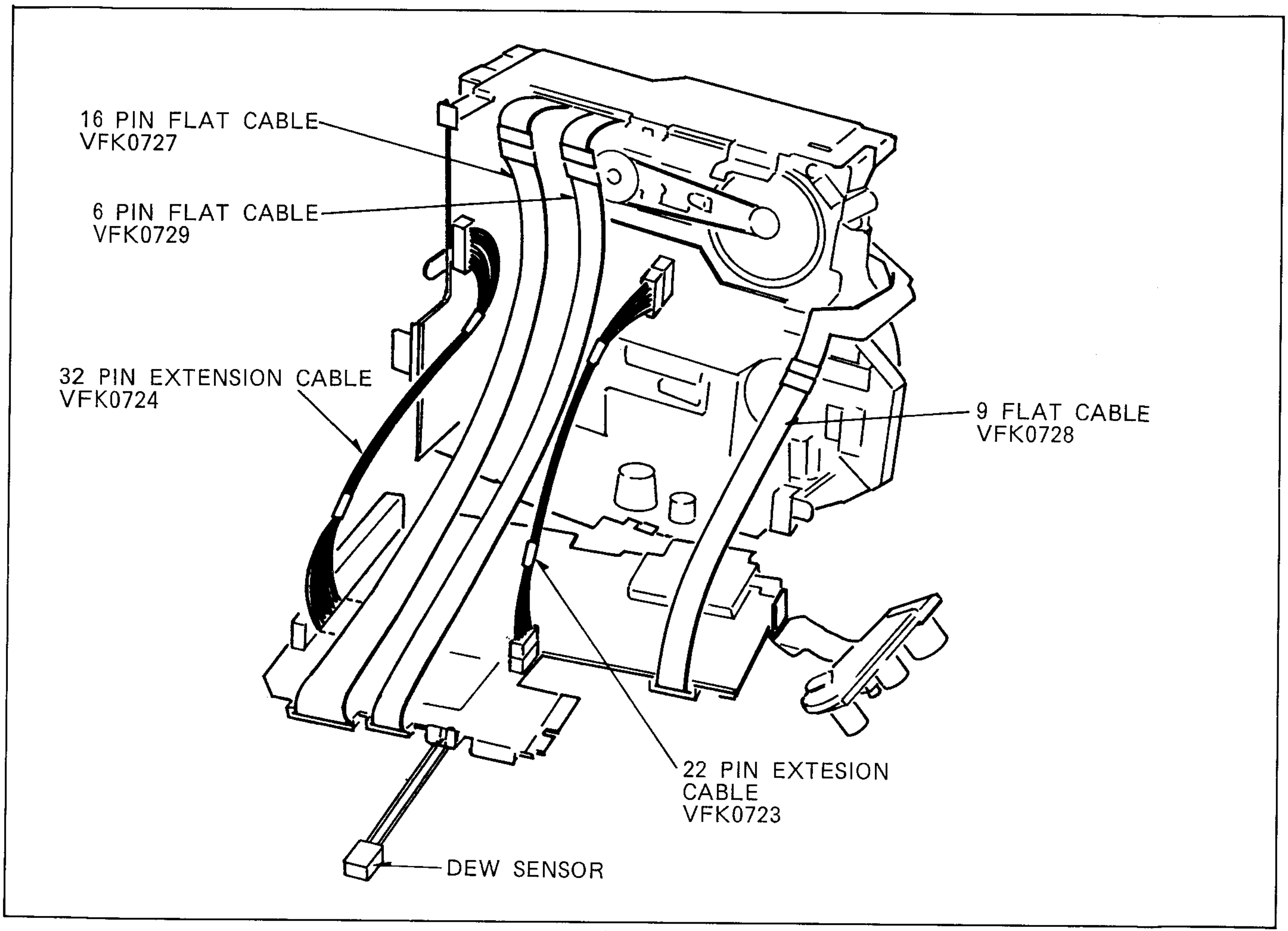

16 PIN FLAT CABLE
VFK0727
6 PIN FLAT CABLE
VFK0729
32 PIN EXTENSION CABLE
VFK0724
9 FLAT CABLE
VFK0728
22 PIN EXTESION CABLE
VFK0723
DEW SENSOR

Fig. T3-2

(3) Connection between Process C.B.A and Sensor C.B.A

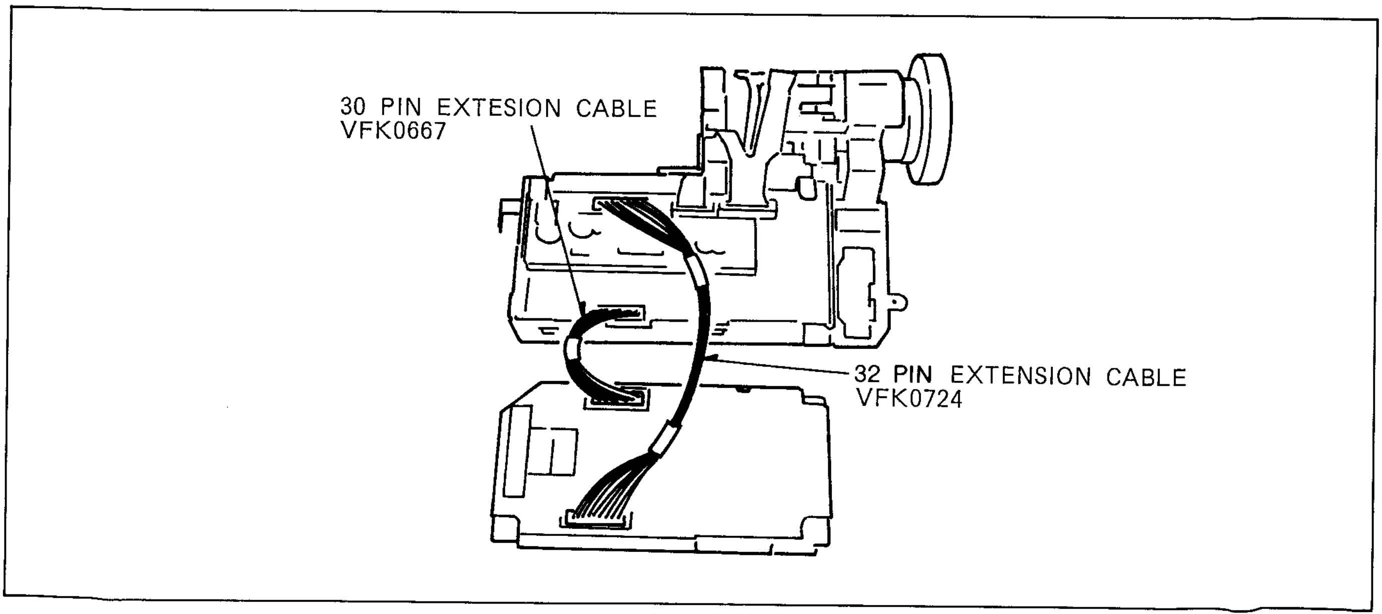
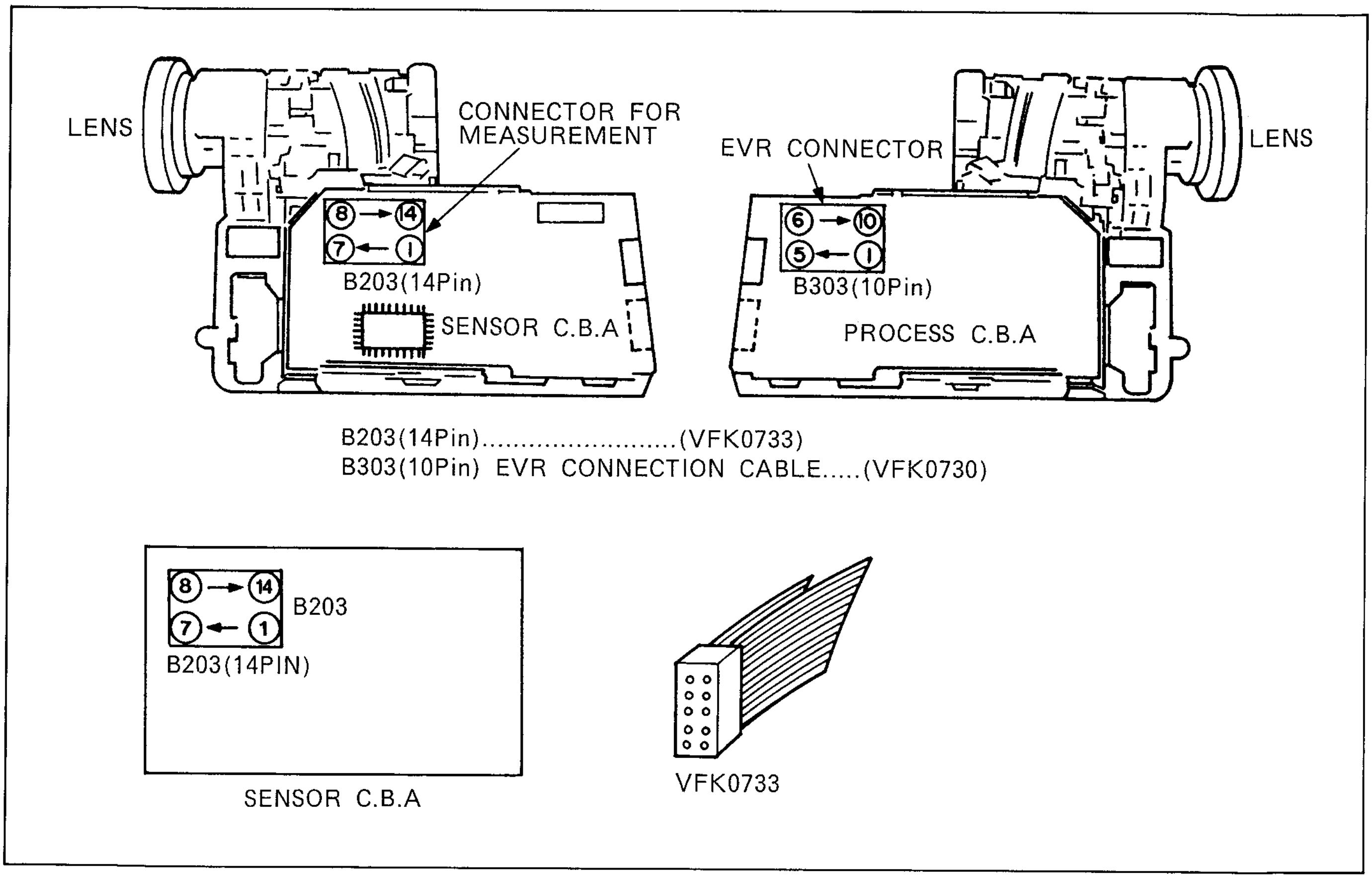

30 PIN EXTESION CABLE
VFK0667
32 PIN EXTENSION CABLE
VFK0724

Fig. T3-3


LENS
CONNECTOR FOR MEASUREMENT
8
14
7
1
B203(14Pin)
SENSOR C.B.A
EVR CONNECTOR
6
10
5
1
B303(10Pin)
PROCESS C.B.A
LENS
8
14
7
1
B203
B203(14PIN)
SENSOR C.B.A
VFK0733

B203(14Pin)........................(VFK0733)
B303(10Pin) EVR CONNECTION CABLE.....(VFK0730)

Fig. T4

How To Replace 0.5mm pitch IC.

(Required tools)

- * Spot Heater: (HS−600,etc) or cordless soldering − iron: (80AEX,etc) (HOT Blowing type)
- * Blower Nozzle for spot Heater: (HS−611.614 615.618,etc)
- * Tweezers
- * Paper tape (Non−flammable Type)
- * Glue (paper glue,etc, to fix IC momentary)
- * Soldering sucker. (De−solder braid)
- * 0.3mm diameter solder
- * Solder flux
- * Special soldering iron (HS−11,etc) (sharp tip pencil type). (Removal)

(1) Stick the paper tape around the IC for protection of chip components when hot air is blowed.
(2) Blow the hot air from upright position to the legs of IC using spot heater (attaching suitable nozzle).
(3) When solder is melting, pick up the IC using tweezers.
(4) Take paper tape out from C.B.A.

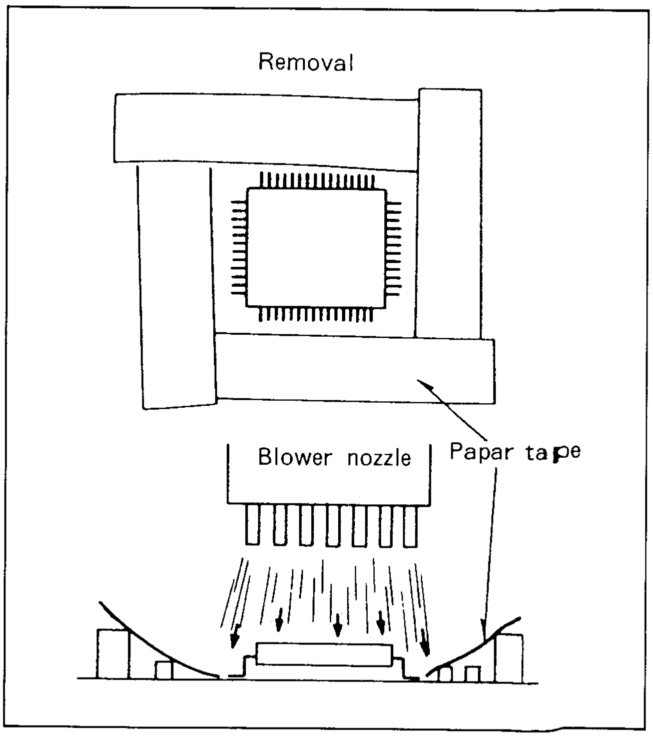

Removal
Blower nozzle
Papar tape

Fig. T5 Removal of IC

(Assemble)

1) Remove the solder which is remained on the round of IC using solder sucker. (De-Solder braid).
2) Attach the glue little bit on the centre of IC round.
3) Put the new IC on to round and align the position of each pins with round.
4) Solder the 2 pins of opposite angle of IC with 0.3mm solder and confirm the position.
5) Solder the all pins of IC with 0.3mm solder and 0.3mm tip solder iron.
6) Confirm if all pins are connected.
7) If solder becomes bridge as shown in Fig. T7 correct the solder using solder sucker (De-solder braid).

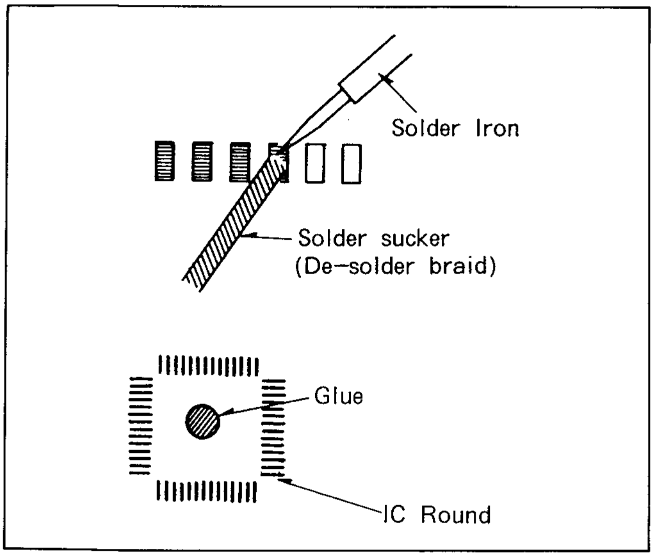

Solder Iron
Solder sucker
(De-solder braid)
Glue
IC Round

Fig. T6 Cleaning the remained solder

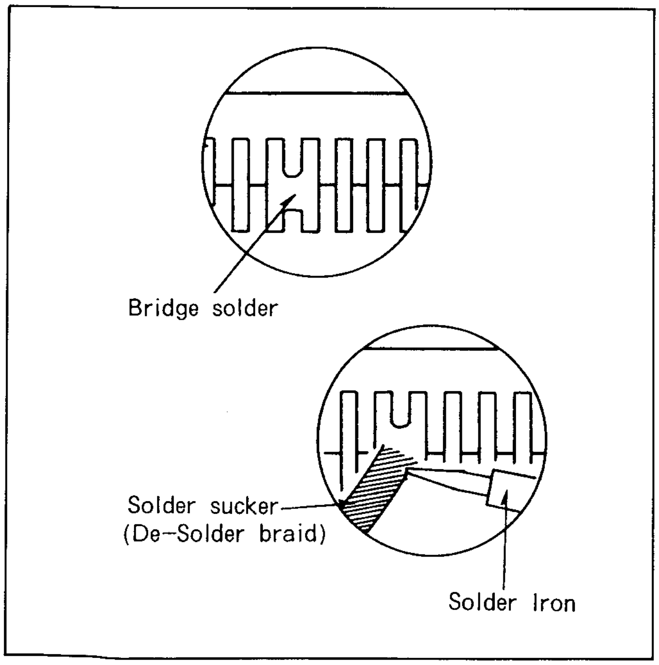

Bridge solder
Solder sucker
(De-Solder braid)
Solder Iron

Fig. T7 Correcting bridge solder

5. How To Replace Capacitor. (New)

1) Heat the one side of capacitor with solder Iron. and push its one side up by finger.
2) Remove one side of leg.
3) Heat the opposite side of capacitor and remove it.
4) When replacing new capacitor put the capacitor and solder it as conventional.

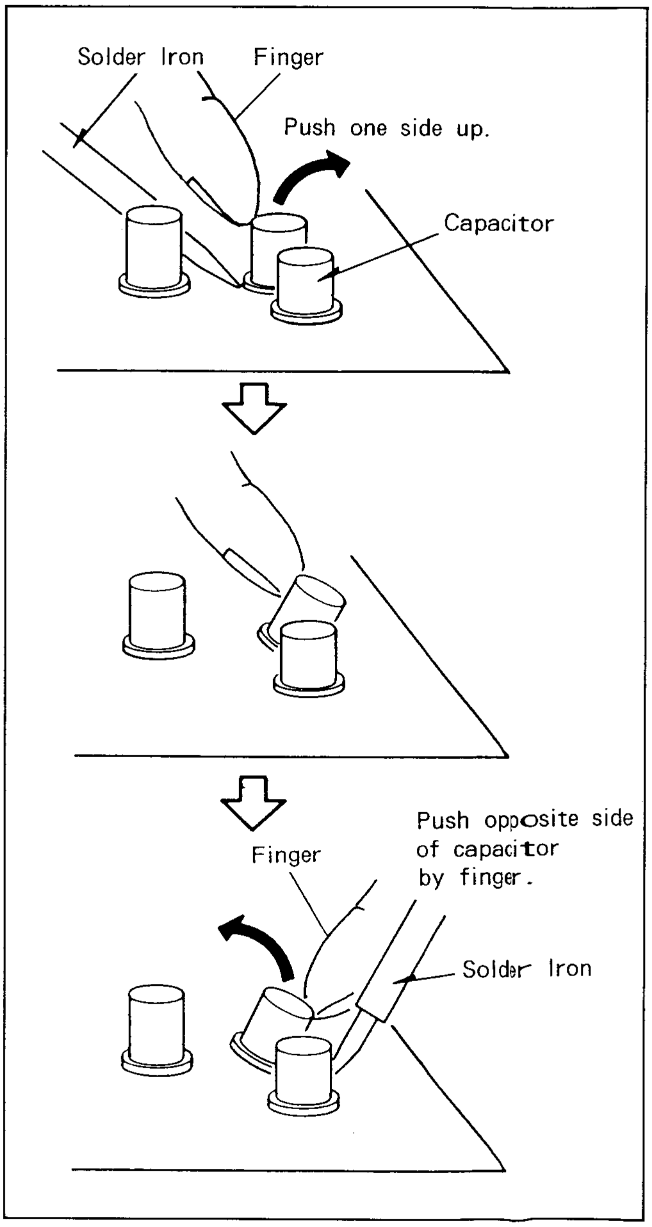

Solder Iron
Finger
Push one side up.
Capacitor
Finger
Push opposite side of capacitor by finger.
Solder Iron

Fig. T8

6. How to Eject Manually.

(1) In Case that Tape is fully unloaded.

* Remove the cassette cover and push the "A" position as shown in Fig. T9.
(Eject Lever: under the garage. Flame).

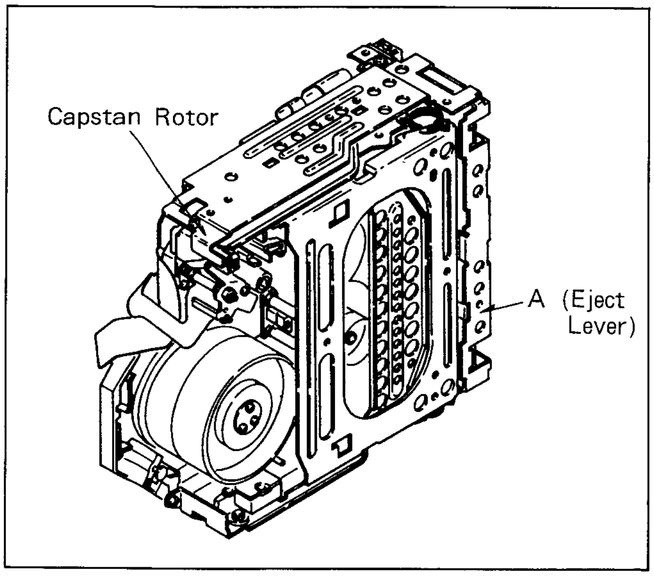


Fig. T9

(2) In Case that Tape is not rewound Completely but mechanism is fully unloaded.

* Remove the Lens Hood, side case (L) Lens Cover, Front case U.
(Please Refer to Disassembly procedures.)

* Rotate the capstan Rotor until tape is rewound.
(Please Refer to Fig. T9)

(3) Eject it as procedure (1).

(4) In Case that Tape and mechanism are still loading condition.

* Remove the cabinet parts.

* Supply DC voltage (1.5V) to loading motor terminal and make it unloading.

* Befor comple unload, Please release the DC Voltage

* Rotate the capstan Rotor until tape is rewound.

* Supply DC Voltage again for make it unloading.

* Eject it as procedure (1)

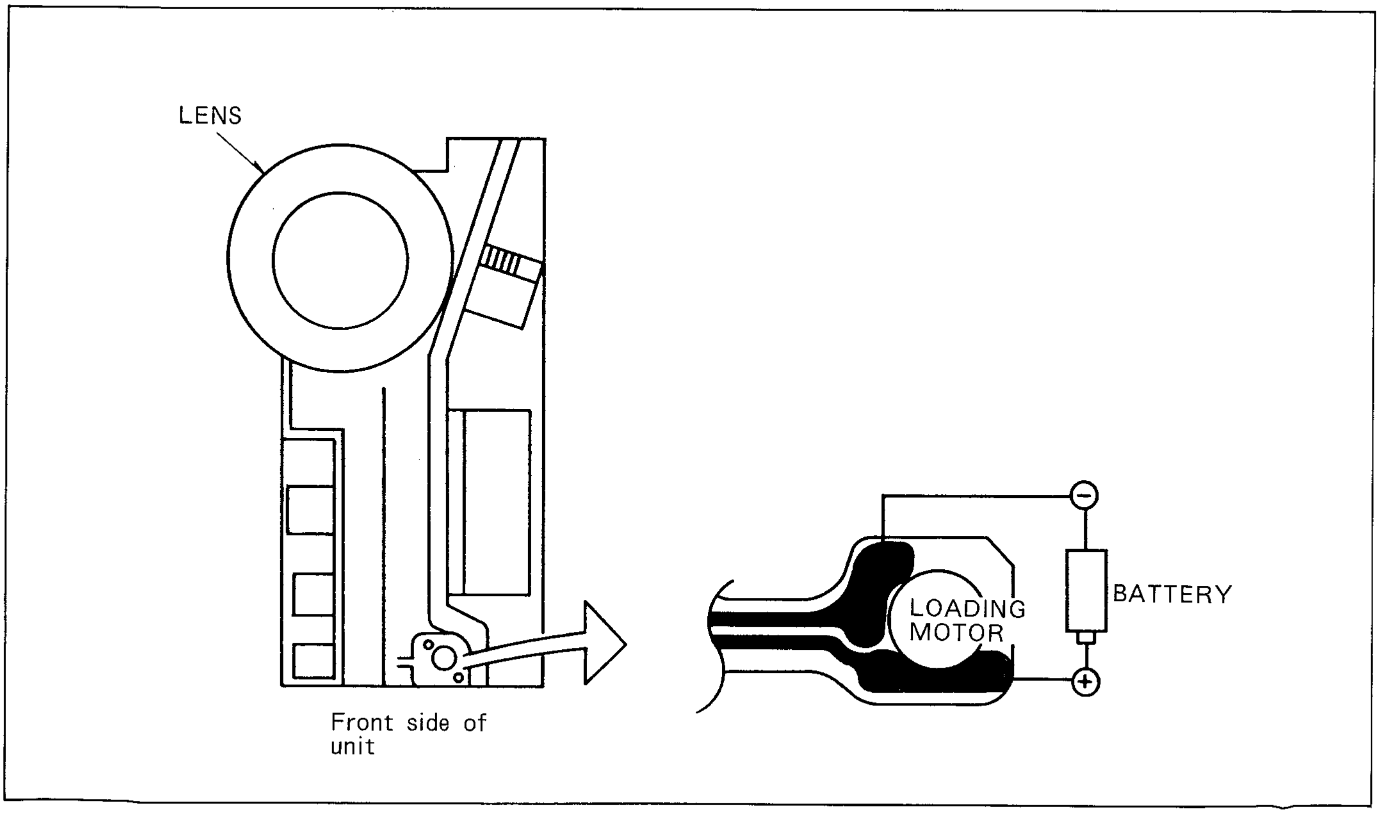


Fig. T10

7.Self–Diagnosing System and Service Test mode.

7–1.General

NV–S5/S500 has the program for self–diagnosing system,which provides a great deal of service information for quick troble shooting.

NV–S5/S500 has two service modes.
If you push the following keys together,unit goes to service mode 1.

DATE/TIME,TRACKING and RESET keys.

Service mode 1 indicate the sadety divices / conditions.

If you push the following keys together,unit goes to service mode 2.

TAPE,TRACKING and RESET keys.

Service mode 2 indicate the Mechanism conditions.

7–2 .Service Mode 1.

NV–S5/S500 is possible to see RAM Data of IC6001 on the EVF with Service Mode 1.
This Service Mode used in oder to check the condition of Safety divices.
How to read the RAM data is as shown Fig.T13 to Fig.T18.

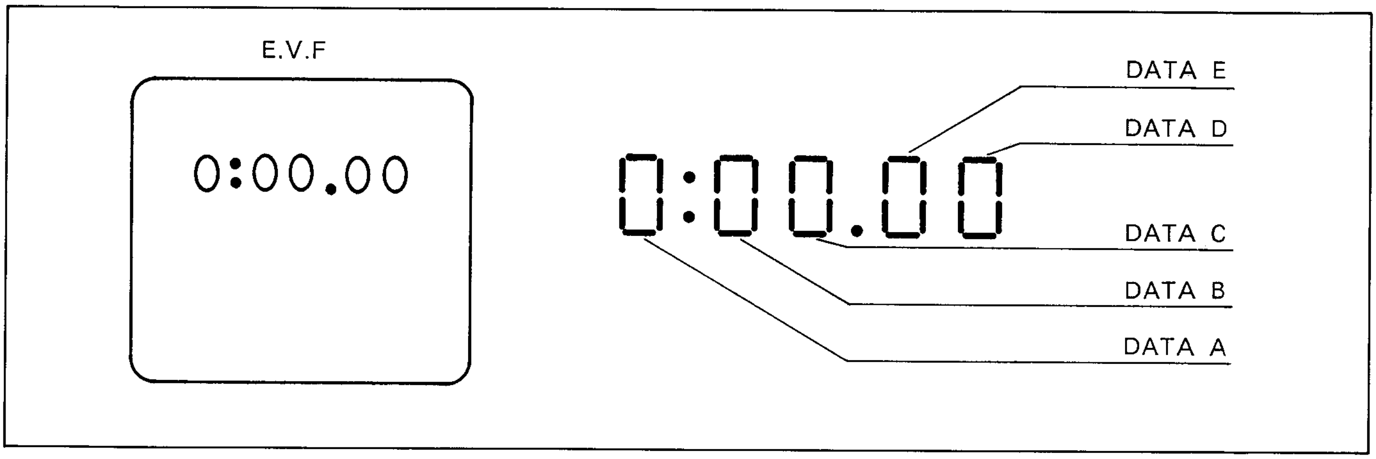


Fig.T13

(1).Information of Data A

CONTENTS \ INDICATION	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CASSETTE SW **up: 1** **down: 0**	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
SAFETY TAB SW **WITH TAB: 1** **WITHOUT TAB: 0**	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1

0: NORMAL CONDITION **1: WARNING CONDITION**

Fig. T14

Each Data(Data A to Data E) are indicate the Hexadecimal data(0 to F).
Please refer to Fig.T13 to Fig.T18 for detail of each Hexadecimal Number.

If Data A indicate "C", Cassette down Switch is down condition.
Also safety tab switch is off condition.

(2).Information of Data B

If Data B indicate "8", There is a possibility that S.Reel Sensor detect lock condition.

INDICATION / CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LOADING LOCK DETECT	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
CYL LOCK DETECT	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
T • REEL LOCK DETECT	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
S • REEL LOCK DETECT	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NORMAL CONDITION 1: WARNING CONDITION

Fig.T15

(3).Information of Data C

If Data C indicate "A", There is a possibility that DEW sensor detect dew.

INDICATION / CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
BATTERY UNDER CUT DETECT	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
DEW	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NORMAL CONDITION 1: WARNING CONDITION

Fig.T16

(4).Information of Data D

If Data D indicate "2",There is a possibility that sensor detect the tape end.

INDICATION / CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
UNLOADIG COMMAND OUTPUT: 1 NO: 0	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
TAPE END DETECT	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
BEGINING OF TAPE DETECT	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
POSITION CHATTERING	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NORMAL CONDITION 1: WARNING CONDITION

Fig.T17

(5).Information of Data E

If Data E indicate "1", There is a possibility that IC6001 generated cylinde on command.

INDICATION CONTENTS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CYL ON COMMAND	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
CAP ON COMMAND	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
CAP REV COMMAND	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
LOADING COMMAND	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0: NO OUTPUT 1: OUTPUT

Fig.T18

7–3. Detail of Service Mode 2

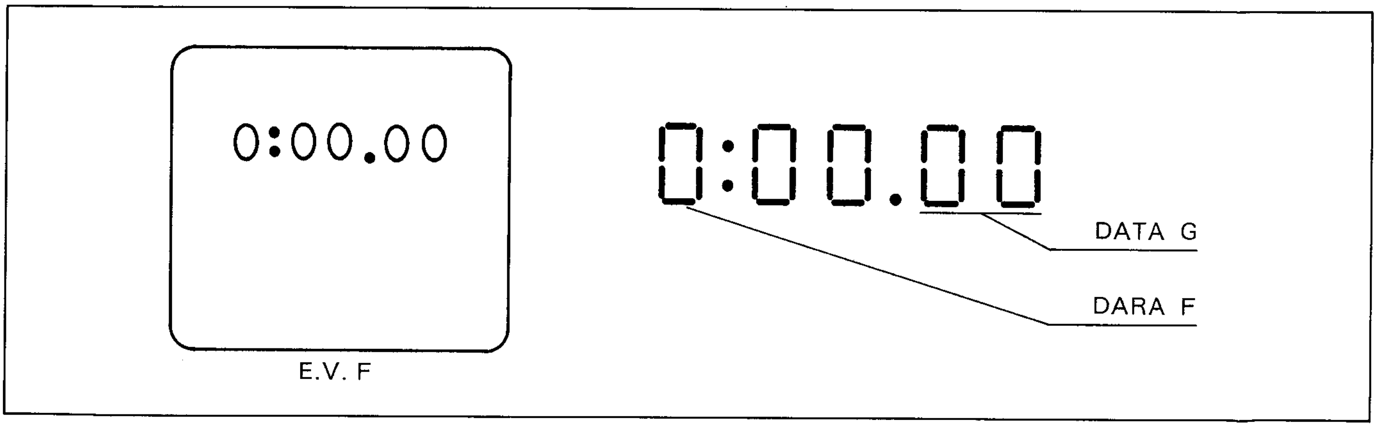


Fig.T19

(1) Information of Data F (Data F indicate the mechanism position)

Indication	Mechanism position
1	EJECT
2	PRE • EJECT
3	STOP 1
4	PRE • STOP
5	MID
6	
7	
8	STOP 2
9	
A	PLAY

(2) Information of Data G (Data G indicate the key operation mode.)

Indication	Key operation
00	STOP
02	REWIND
03	FF
06	PAUSE
08	REC
0A	PLAY
30	
53	RESER (COUNTER)
7F	NO USE

Fig. T20

EXAM PLE FOR INDICASTION

CAMERA MODE
(Press the OPERATE switch and slide it to CAMERA side)

	SERVICE MODE 1	SERVICE MODE 2
CASSETTE DOWN WITHOUT TAPE	4: 00.60	3: 00.08
REC PAUSE	E: 00.01	A: 00.08
REC	E: 00.03	A: 00.08

VTR MODE
(Press the OPERATE switch and slide it to VTR side)

	SERVICE MODE 1	SERVICE MODE 2
CASSETTE DOWN WITHOUT TAPE	4: 00.60	3: 00.7F
STOP	E: 00.00	8: 00.7F
PLAY	E: 00.03	A: 00.7F
PLAY PAUSE	E: 00.01	A: 00.7F
FF	E: 00.03	A: 00.7F
REW	E: 00.05	A: 00.7F
CUE	E: 00.03	A: 00.03
REVIEW	E: 00.05	A: 00.02

Fig. T21

8. HOW TO CHECK DIGITAL CIRCUIT (PROCESS) (Using Ramp Generator)

1) Checking Principle.

It is rather easy to check the digital circuit if ramp signal (sawtooth signal) can be supplied to input of A/D Converter (IC302–19).
Because output of A/D Converter is specified as shown below.

Beside A/D Converter (IC302) output, all digital IC's input and output signals become specified pulses, which are mentioned in schematic diagram of process.
Therefore, you can check the almost all data lines easily when ramp signal is supplied to A/D Converter input.

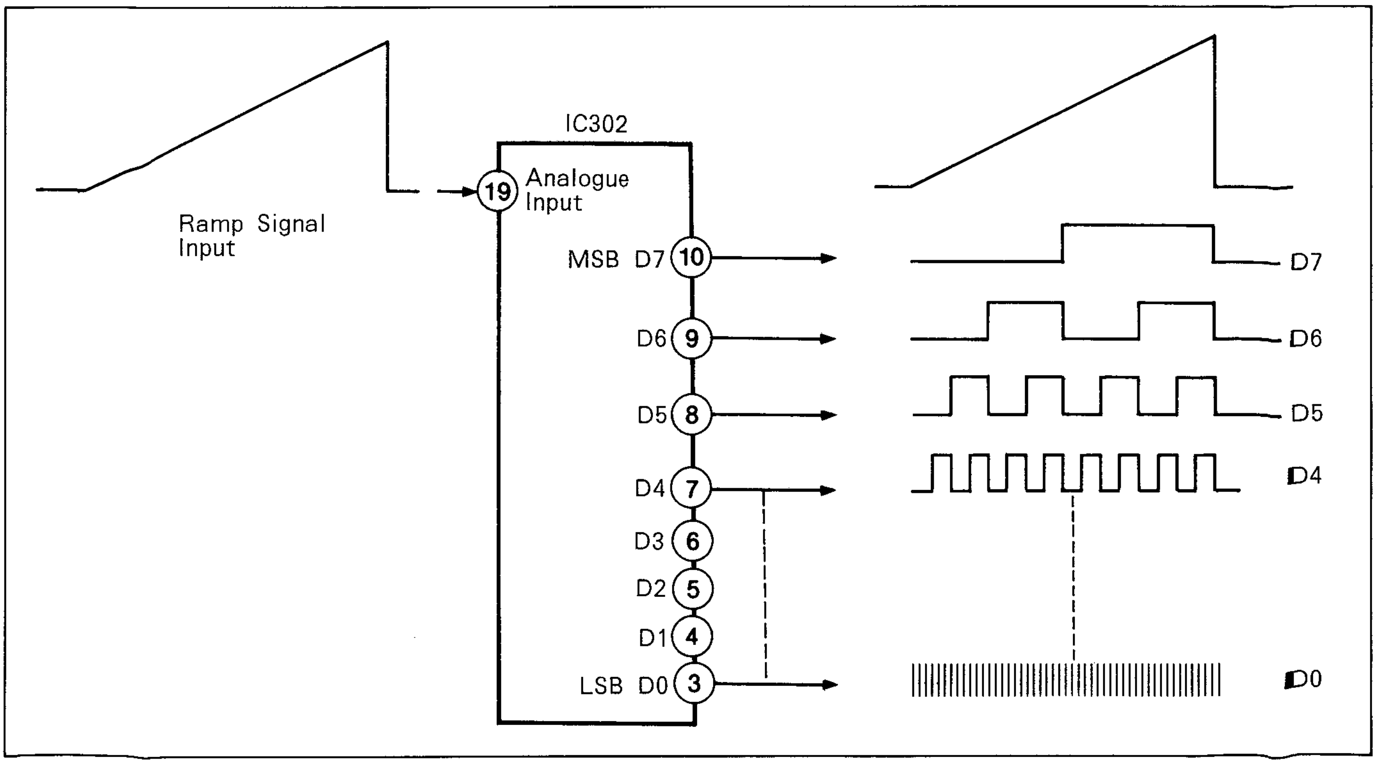
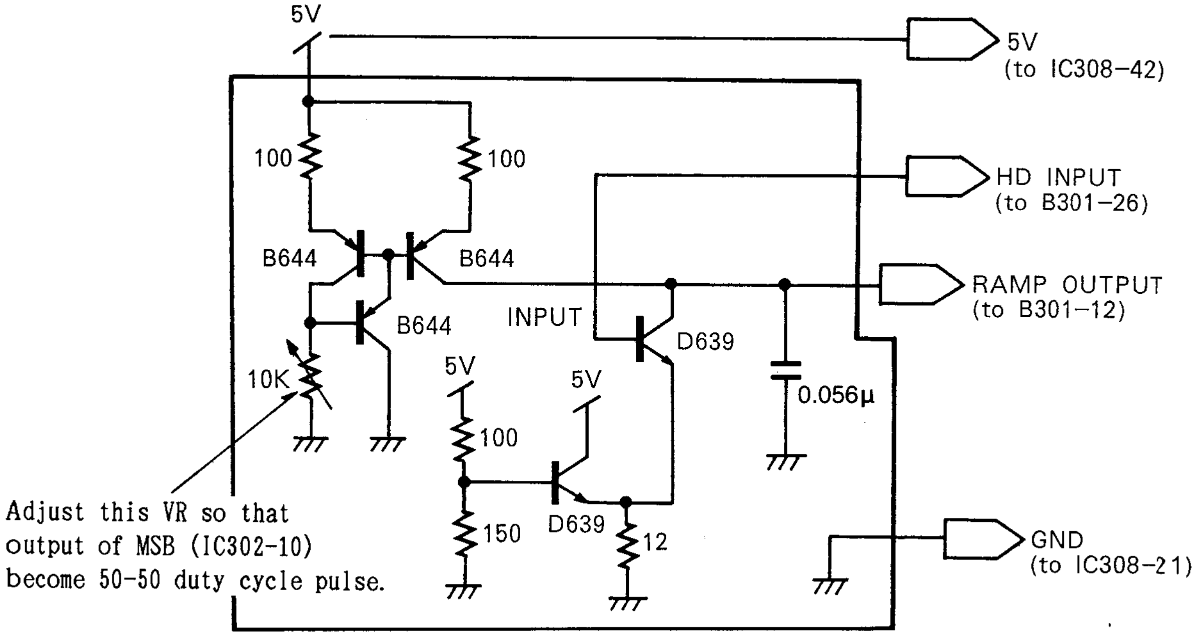


Fig. T22

2) How to Connect ramp generator.

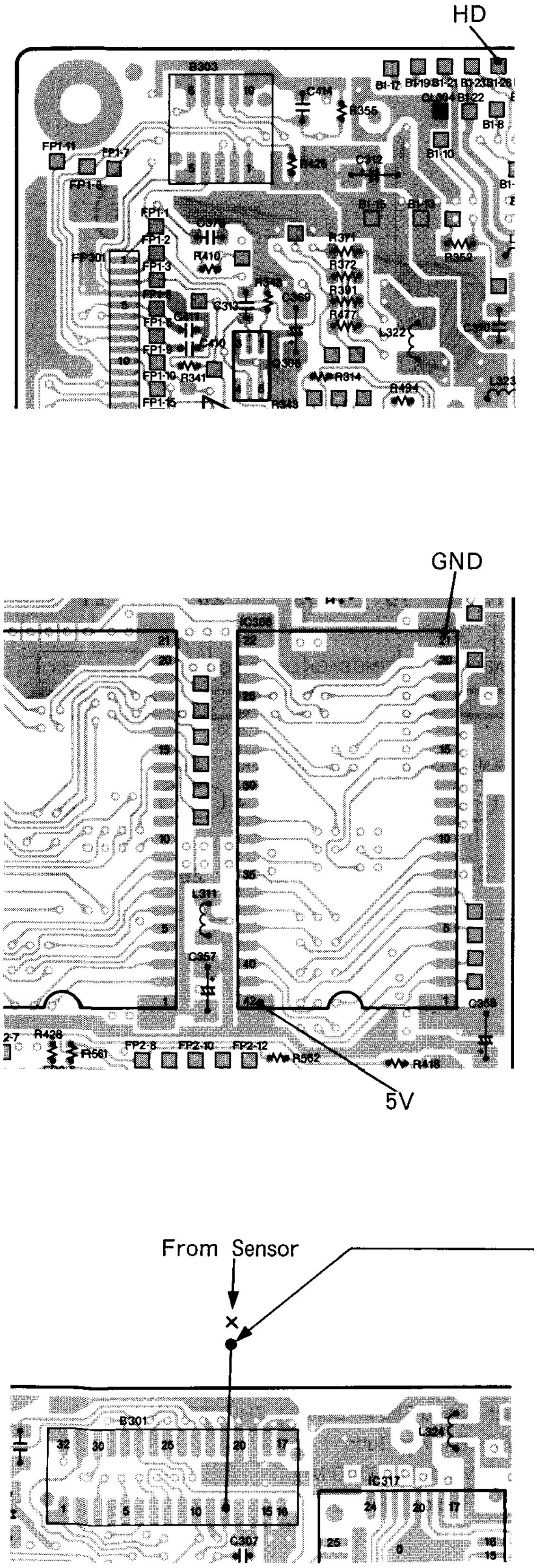
In order to produce ramp signal which is synchronising with HD(horizontal drive) of camera, the following circuit(ramp generator) has been developed (for service purpose).
Let's make it and connect it to process board as shown in Fig.T23,24.


5V
5V
(to IC308-42)
100
100
HD INPUT
(to B301-26)
B644
B644
RAMP OUTPUT
(to B301-12)
B644
INPUT
D639
5V
5V
10K
0.056μ
100
150
D639
12
GND
(to IC308-21)

Adjust this VR so that output of MSB (IC302-10) become 50-50 duty cycle pulse.

ITEMS	VALUE	PCS
RESISTOR		
ERDS2TJ120	12ohm	1
ERDS2TJ101	100ohm	3
ERDS2TJ151	150ohm	1
VARIABLE RESISTOR		
EVNDRAA00B14	10Kohm	1
TRANSISTOR		
2SB644	PNP	3
2SD639	NPN	2
CAPACITOR		
ECQB1H563JH	0.056μ	1

Fig. T23


HD
GND
5V
From Sensor
B303
IC317
B301
L324
C307

output of Ramp Generator
(Cut the wire of extension cable (Pin 12)
and connect the output of Ramp Generator)

Fig. T24

9. How to use the Camera Holder

* Camera Holder (VFK0382)
* Screw (XQN2+CF4)

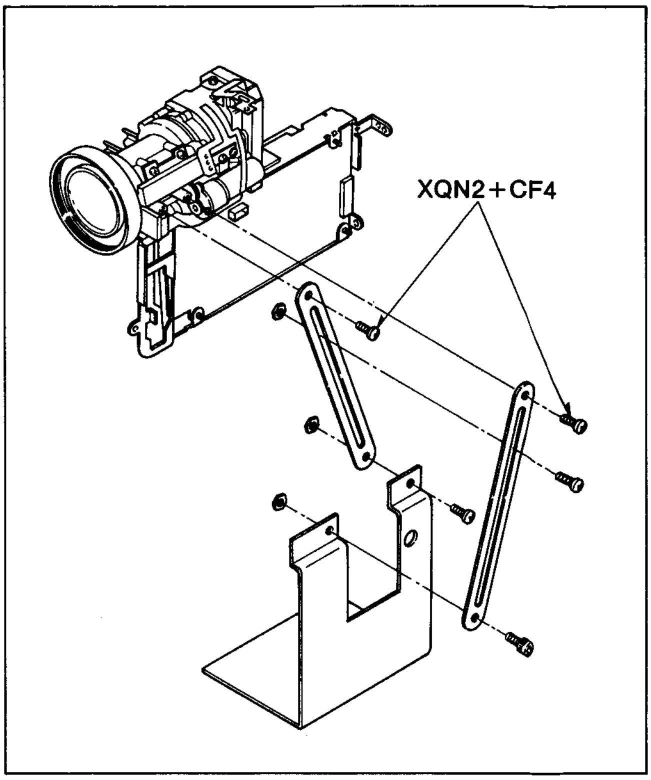
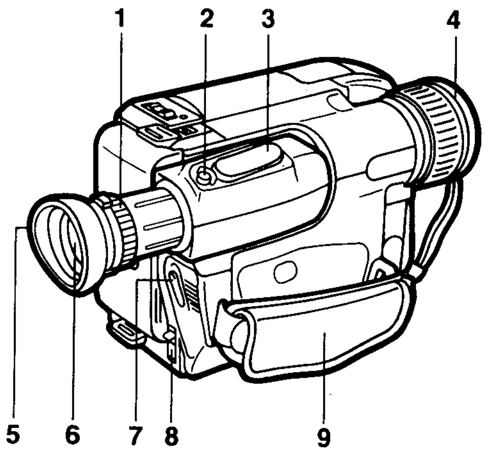
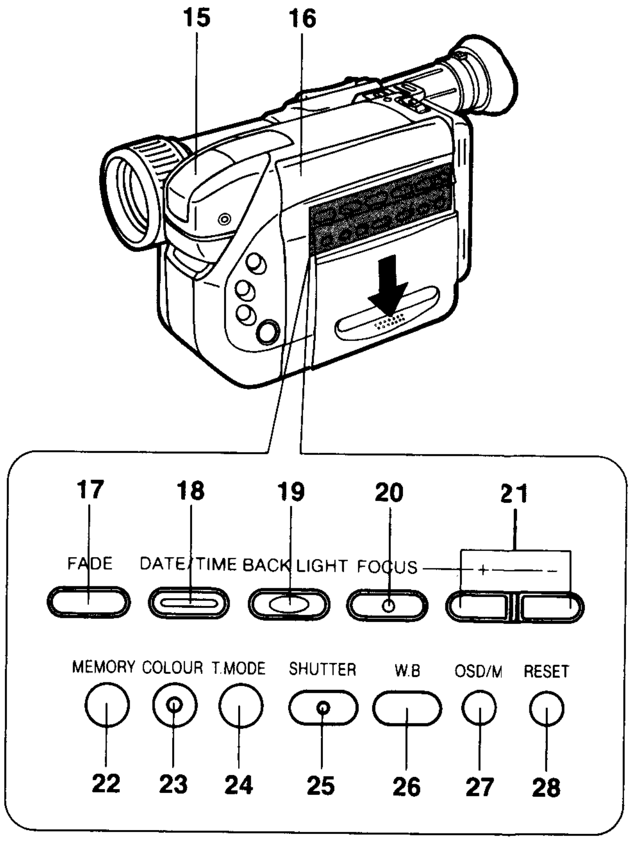


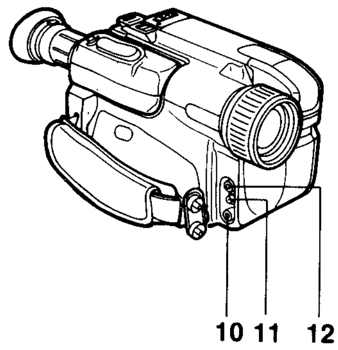
Fig. T25

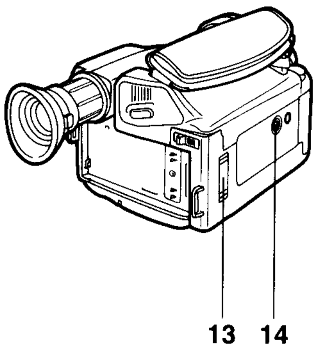
SECTION 1
GENERAL DESCRIPTIONS

1-1. CONTROLS AND COMPONENTS



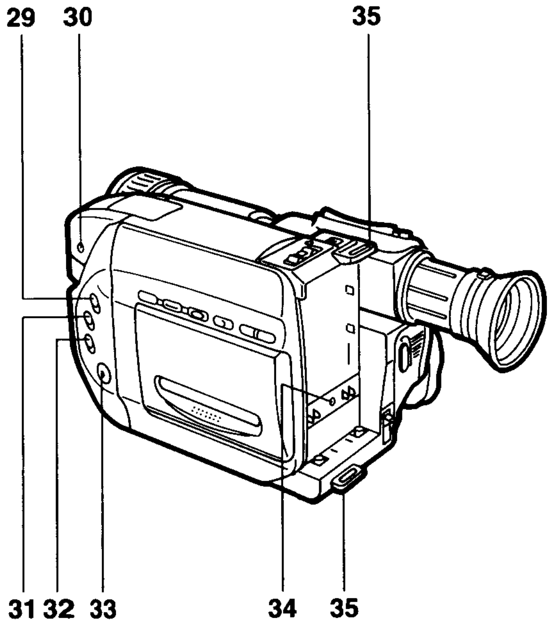

15
16
17
18
19
20
21
FADE
DATE/TIME
BACK LIGHT
FOCUS
+
–
MEMORY
COLOUR
T.MODE
SHUTTER
W.B
OSD/M
RESET
22
23
24
25
26
27
28



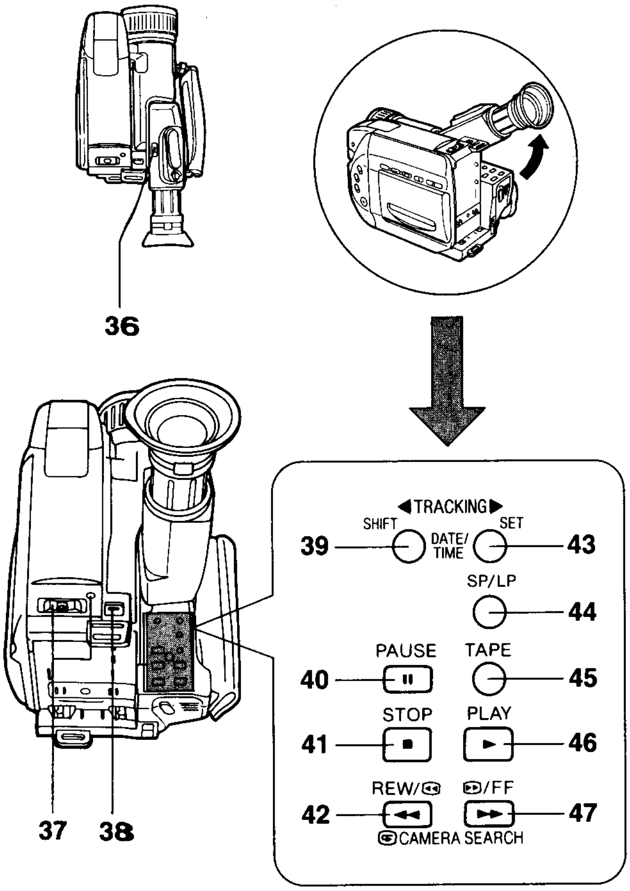


1 Eyepiece Corrector Control
2 Snapshot Rec Button [SNAPSHOT REC]
3 Zoom Buttons [W] / [T]
4 Lens Cap
5 Eyecup
6 Electronic Viewfinder
7 Recording Start/Stop Button
8 Battery Eject Lever [BATT. EJECT]
9 Grip Belt
10 Audio Output Socket
11 RF DC Output Socket
12 Video Output Socket
13 Button Battery Holder
14 Tripod Receptacle

15 Microphone
16 Cassette Compartment
17 Fade Button [FADE]
18 Date/Time Selector Button [DATE/TIME]
19 Back Light Button [BACKLIGHT]
20 Focus Button [FOCUS]
21 Focus +/– Buttons [+/–]
22 Memory Button [MEMORY]
23 Title Colour Selector Button [COLOUR]
24 Title Mode Selector Button [T. MODE]
25 High Speed Shutter Button [SHUTTER]
26 White Balance Button [W.B]
27 OSD/M Button [OSD/M]
28 Reset Button [RESET]


29
30
35
31
32
33
34
35

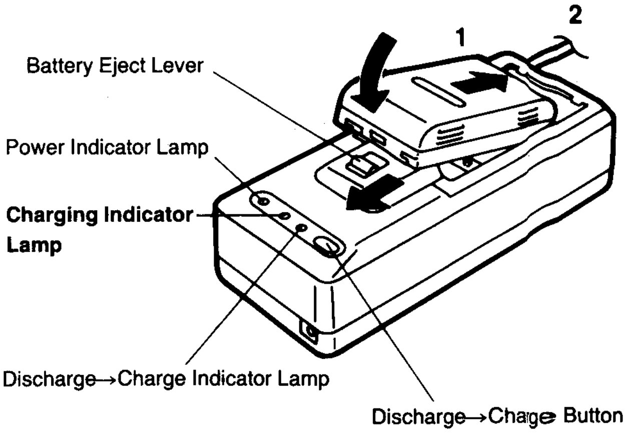
29 Title Button [TITLE]
30 External Microphone Socket (mono) [MIC]
31 Digital Effect Button [DIGITAL EFFECT]
32 Digital Zoom Button [DIGITAL ZOOM]
33 Image Stabilizer Button [IMAGE STABILIZER]
34 DC Input Socket
35 Shoulder Strap Holder


36
37
38
◀TRACKING▶
SHIFT
SET
DATE/ TIME
39
43
SP/LP
44
PAUSE
TAPE
40
45
STOP
PLAY
41
46
REW/⏪
⏩/FF
42
47
CAMERA SEARCH

36 EVF Lock Switch [RELEASE/LOCK]
37 Operation Switch and Operation Indicator [OPERATE]
38 Cassette Eject Button [EJECT]
39 Tracking/Date/Time Shift Button [TRACKING/SHIFT]
40 Pause Button [PAUSE]
41 Stop Button [STOP]
42 Rewind/Review Button [REW/⏪]
43 Tracking/Date/Time Set Button [TRACKING/SET]
44 Recording Speed Selector Button [SP/LP]
45 Remaining Tape Time Button [TAPE]
46 Play Button [PLAY]
47 Fast Forward/Cue Button [⏩/FF]

1-2. BATTERY PACK

Charging


Battery Eject Lever
Power Indicator Lamp
Charging Indicator Lamp
1
2
Discharge→Charge Indicator Lamp
Discharge→Charge Button

1 Attach the Battery Pack.
2 Connect the AC Adaptor to the Mains.

- **Charging Indicator Lamp**
  This lamp is lit while the charging is taking place, and it goes out when the charging is finished.

Notes:
- The charging takes about 60 minutes.
- With a fully charged Battery Pack, the Movie Camera can be used continuously for approx. 45 minutes (Image Stabilizer function on).
- With the Battery Packs VW-VBS2E (optional) and VW-VBR2E (optional), the charging as well as the possible recording time is twice as long as for the standard supplied Battery Pack.

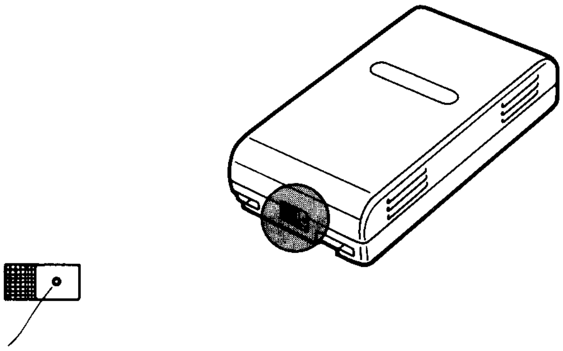
■ When the charging is completed, slide the Battery Eject Lever in the direction of the arrow and remove the Battery Pack.

■ **Discharge→Charge Function**

If a Battery Pack is recharged repeatedly in not completely discharged condition, the so-called "memory effect" will occur, and the operation time of the recharged Battery Pack will gradually become shorter. Therefore, it is recommended to regenerate the Battery Pack after approx. every fifth recharging by using the Discharge→Charge Function.

1. Attach the Battery Pack to the AC Adaptor.
2. Connect the AC Adaptor to the mains.
3. Press the Discharge→Charge Button on the AC Adaptor for more than 1 second to completely discharge the Battery Pack.
   - The Discharge→Charge Indicator Lamp will light up. When the discharging is finished, the Charging Indicator Lamp will light up instead, and the charging will start.

Charging Confirmation Marker on the Battery Pack



Charging Confirmation Marker

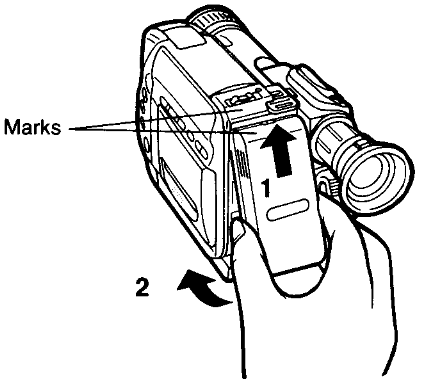
This marker makes it convenient to distinguish between charged and discharged Battery Packs. For example, slide the knob so that the dot is visible to mark a charged Battery Pack, and slide it so that the dot is not visible for a partially of fully discharged Battery Pack.

The function of the Battery Pack is based on a chemical reaction. Use it according to its characteristics.

- Charge the Battery Pack within a temperature range of 10°C–35°C. If charged at lower temperatures, the chemical reaction cannot take place optimally, causing the performance of the Battery Pack to deteriorate. At higher temperatures, the Battery Pack cannot be charged completely.
- Store the Battery Pack in cool and dry place. If it is exposed to high temperatures for a long time, the self-discharging process will be accelerated and the operation time will be shortened.
- Charge the Battery Pack before using it because self-discharging may occur if it is left unused for a long period of time after charging.
- When not using the Battery Pack, remove it from the Movie Camera or the AC Adaptor.

Attaching the Battery Pack

1. Align the mark at the top of the Battery Pack with that on the Movie Camera and insert the Battery Pack with its upper part first.
2. Insert the Battery Pack until it locks with a click.

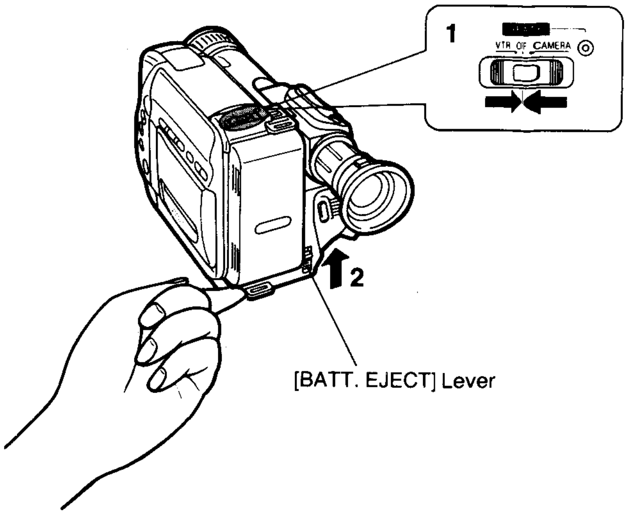


Removing the Battery Pack

1. To turn off the Movie Camera, press the [OPERATE] Switch and slide it to "OFF".
2. About 10 seconds later: Pull off the Battery Pack while pushing up the [BATT. EJECT] Lever.

Caution:

- If the Battery Pack is removed during recording or playback, the tape remains wound around the video head cylinder and could become damaged.

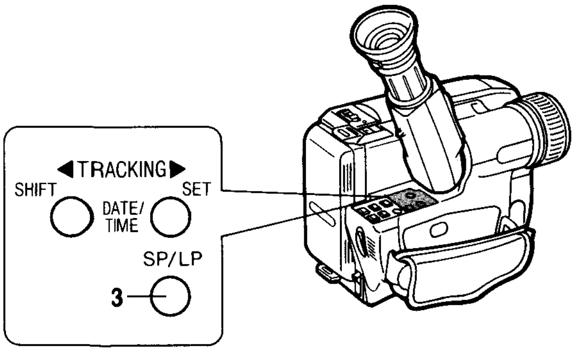


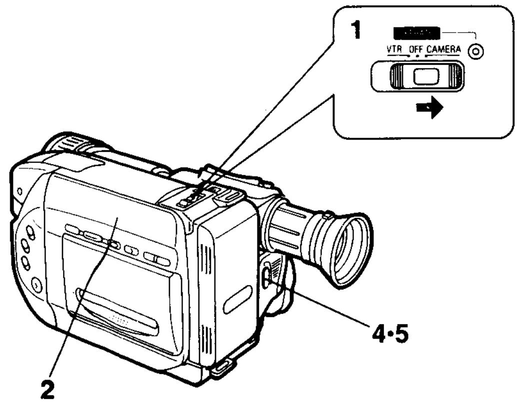
1-3. CAMERA RECORDING

To Start Recording

- Remove the Lens Cap from the Lens and attach it to the Grip Belt.
- Extract the EVF to its fully extended position.

1. Press the [OPERATE] Switch and slide it to "CAMERA".
2. Insert a video cassette with intact erasure prevention tab.
   - A few seconds after closing the Cassette Compartment Cover, the Movie Camera will be in the recording pause mode.
3. Select the recording speed with the [SP/LP] Button. The selected speed is indicated in the EVF.
   - SP: Normal tape speed (maximum recording time as indicated on the cassette; optimum picture quality)
   - LP: Slow tape speed (max. recording time is double the figure indicated on the cassette; slightly inferior picture quality)
4. Press the Start/Stop Button.
   - The recording starts.
5. Press the Start/Stop Button again to stop the recording temporarily. (Recording pause mode)
   - To record the next scene(s), repeat steps 4 and 5. The new scene will be joined to the previous one with smooth transition.
   - If the Movie Camera is left in the recording pause mode for more than 6 minutes, the recording pause mode will be canceled and the EVF will be turned off (recording lock mode). To resume shooting from this condition, set the [OPERATE] Switch to "OFF" and then to "CAMERA" again. If the Movie Camera is left in the recording lock mode for more than 48 hours, it will automatically turn itself off completely.





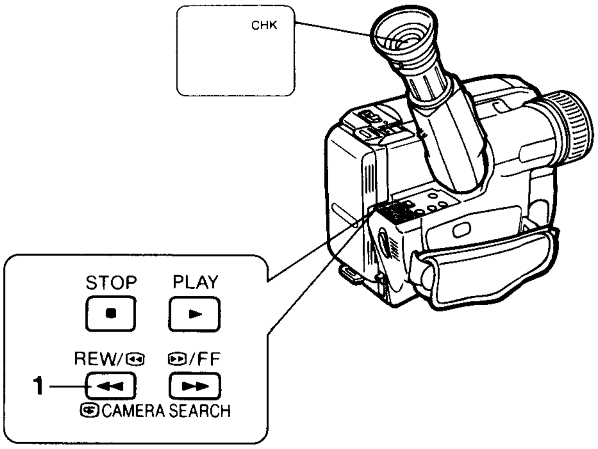
To Stop Recording

1. Press the Start/Stop Button to finish recording and put the Movie Camera in the recording pause mode.
2. To turn the Movie Camera off, press the [OPERATE] Switch and slide it to "OFF".

To Check the End of a Just Recorded Scene

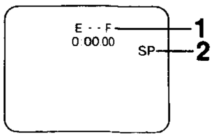
After finishing the shooting of a scene, and with the Movie Camera still in the recording pause mode ("PAUSE" is indicated in the EVF):

1. Press the [REW/◀◀] Button.
   - The "CHK" Indication in the EVF will light up, and the last 2–3 seconds of the last recorded scene will be played back in the EVF. After that, the Movie Camera is again in the recording pause mode.

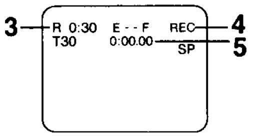


1-4. INPORTANT INDICATIONS IN THE EVF

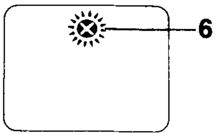
When the Movie Camera is turned on.



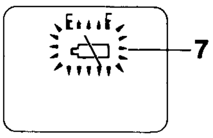
When shooting is started.



When the heads are dirty.



When the Battery Pack is exhausted.



1 **Remaining Battery Power Indication**

E--F The "—" Indications begin to disappear from the right to left as the power of the Battery Pack weakens.

- When attaching the Battery Pack to the Movie Camera, the "E- -F" Indication will initially be displayed for approx. one minute and then the actual remaining battery power will be displayed.

2 **Recording Speed Indication**

SP SP mode
LP LP mode

3 **Remaining Tape Time Indication**

4 **Recording Indication**

5 **Tape Counter Indication**

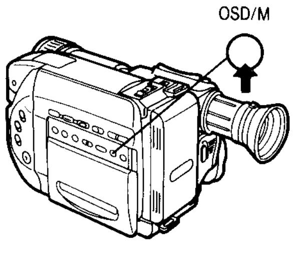
The figures in this indication change according to the elapsed tape time.

6 **Video Head Clogging Indication** (see page 53)

7 **Battery Power Warning Indication**

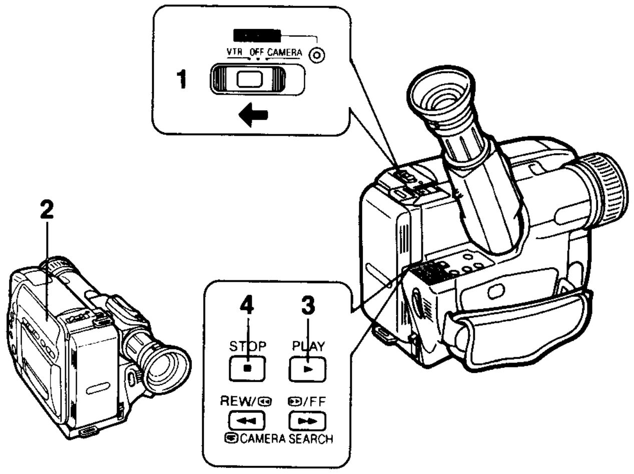
When only one bar "—" in the Battery Power Indication remains lit, the Battery Power Warning Indication "⌫" starts to flash. When the last bar has disappeared, the flashing becomes faster. There is now very little battery power left, and the Movie Camera will automatically turn itself off in a few minutes. To continue shooting or playback, replace the Battery Pack with a fully recharged one.

To Cancel the Indications in the EVF



- Press the [OSD/M] Button two times.
- Press this button once more to make the indications appear again.
- The Tape Running, Date, Time, and Title function Indications cannot be canceled with the [OSD/M] Button.

1-5. PLAYBACK



The recorded tape can be played back on the EVF or on a connected TV set. For the connections, see page 47.

1 Press the [OPERATE] Switch and slide it to "VTR".

2 Insert the recorded cassette.

3 Press the [PLAY] Button.

4 Press the [STOP] Button to finish playback.

Note:

- The tape will be rewound automatically when it reached its end.

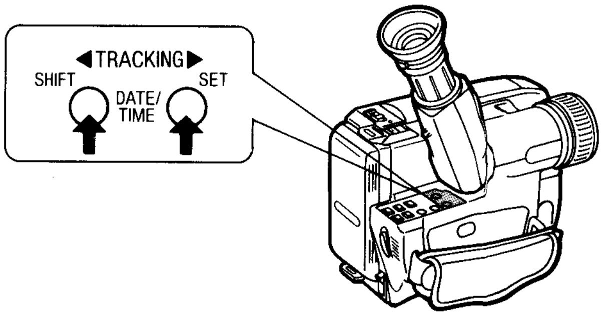
Tracking Adjustment

When the picture is distorted by noise bars during playback, the tracking needs to adjusted.

1 Press both the [◀ TRACKING] and [TRACKING ▶] Buttons simultaneously.

2 Eliminate the noise bars by adjusting with the Tracking with the [◀ TRACKING] or [TRACKING ▶] Button.

- When playing back a tape which has been recorded on another camera, it may not be possible to completely eliminate these noise bars.



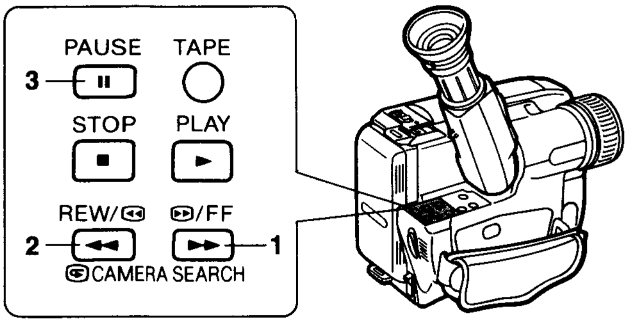
Cue, Review and Still Playback

During normal playback:

1	For Cue playback:	Keep the [⏩/FF] Button pressed during playback.
2	For Review playback:	Keep the [REW/⏪] Button pressed during playback.
3	For Still playback:	Press the [PAUSE] Button during playback. To resume the normal playback, press this button again.

Note:

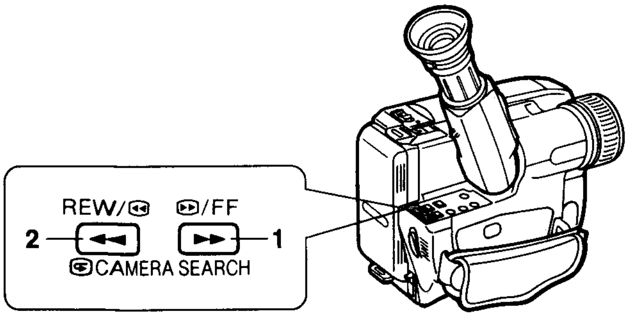
- The sound will be played back only during normal playback (if connected to a TV set).
- In the Cue, Review and Still playback modes, horizontal noise bars appear in the picture and the picture may become black and white or distorted. This is not an indication of a malfunction.
- Still playback: If the Movie Camera is left in this mode for about 6 minutes, it will switch to the stop mode, to protect the tape and video heads.


PAUSE
TAPE
3
STOP
PLAY
REW/⏪
⏩/FF
2
1
⏪CAMERA SEARCH

Fast Forwarding or Rewinding the Tape

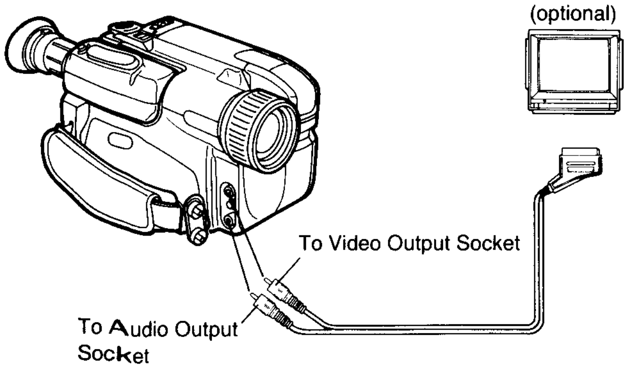
With the Movie Camera in the stop mode:

1. Press the [⏩/FF] Button to wind the tape forward at high speed.
   - The tape will be rewound automatically when it reaches its end.
2. Press the [REW/⏪] Button to rewind the tape at high speed.
   - The tape will stop automatically when it reaches its beginning.

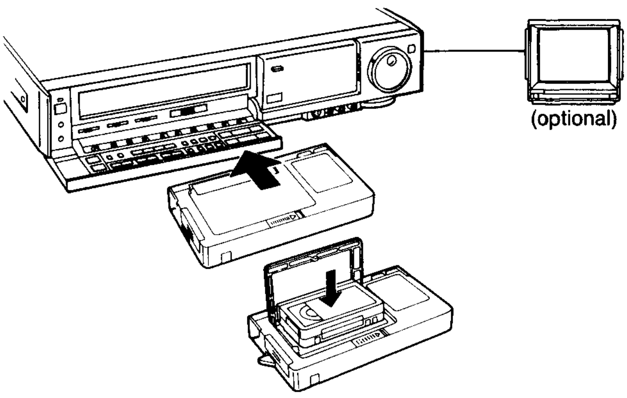

REW/⏪
⏩/FF
2
1
⏪CAMERA SEARCH

1-6. PLAYBACK VIA TV SET (CONNECTIONS)

TV Set with AV Input Socket


(optional)
To Video Output Socket
To Audio Output Socket

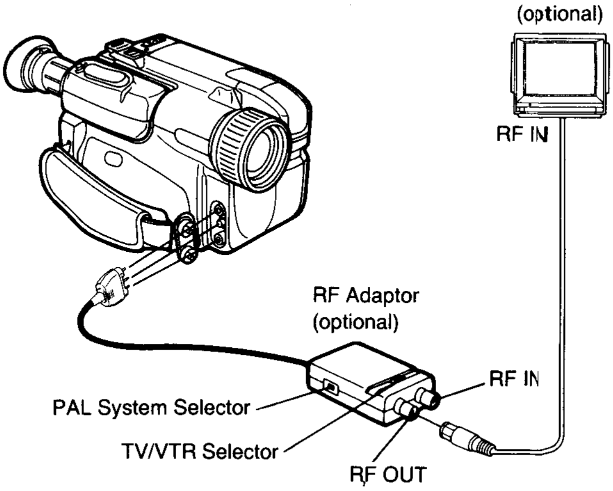
Playback on a Table Type VTR



Use the Cassette Adaptor. (See page 51 for details.)

TV Set without AV Input Socket

Before connecting the RF Adaptor to the Movie Camera, turn the Movie Camera off with the [OPERATE] Switch.


(optional)
RF IN
RF Adaptor
(optional)
RF IN
PAL System Selector
TV/VTR Selector
RF OUT

TV Set
Tune to the video playback channel (UHF channel 36).

TV/VTR Selector on the RF Adaptor

VTR:	For playing back a cassette
TV:	For watching TV

PAL System Selector

G:	For Continental Europe
I:	For U.K.

1-7. STANDARD ACCESSORIES

- AC Adaptor
- Battery Pack
- Cassette Adaptor
- RF Adaptor
- Shoulder Strap
- Audio/Video Cable
- DC Input Cable
- Battery for Cassette Adaptor Operation
- Battery for Clock Operation

2-1. DISASSEMBLY PROCEDURES

2-1-1. DISASSEMBLY FLOW CHART

The following flowchart describes the order or steps for removing cabinet parts and certain printed circuit boards in order to make access to the items needing service.
To reassemble the unit, follow the steps in reverse order.

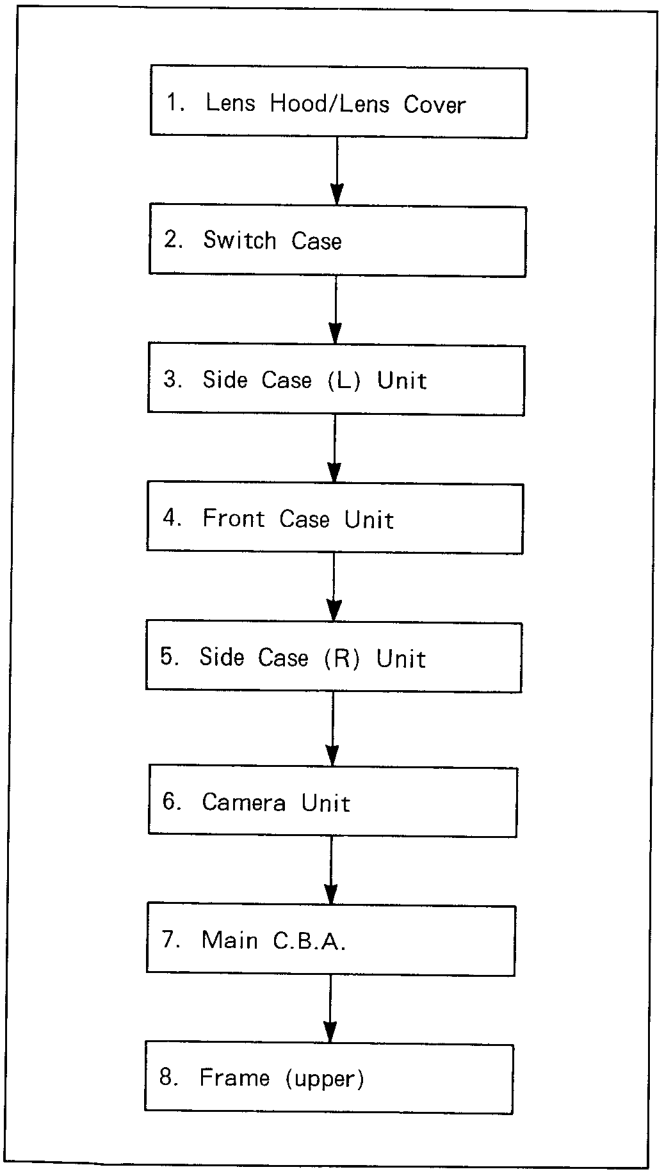

1. Lens Hood/Lens Cover
2. Switch Case
3. Side Case (L) Unit
4. Front Case Unit
5. Side Case (R) Unit
6. Camera Unit
7. Main C.B.A.
8. Frame (upper)

Fig. D1

2-1-2. DETAILED DISASSEMBLY METHOD

1. Removal of Lens Hood/Lens Cover.

   1) Rotate lens Hood to counter-clockwise and remove it.
   2) Remove lens cover.(to arrow mark)

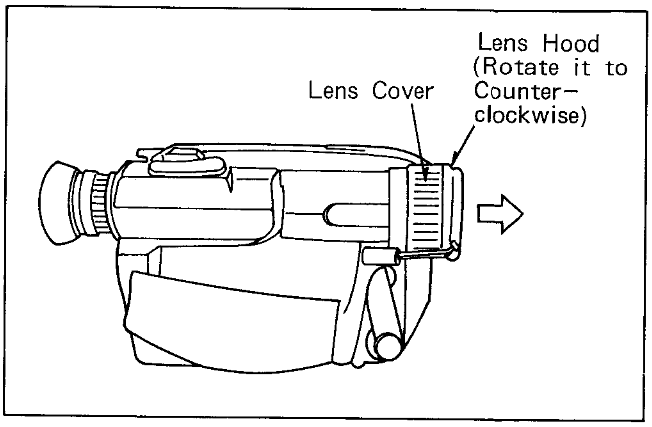

Lens Hood
(Rotate it to Counter-clockwise)
Lens Cover

Fig. D2

2. Removal of Switch Case.

   Remove.....2 Screws(A)
   (and lift it up)

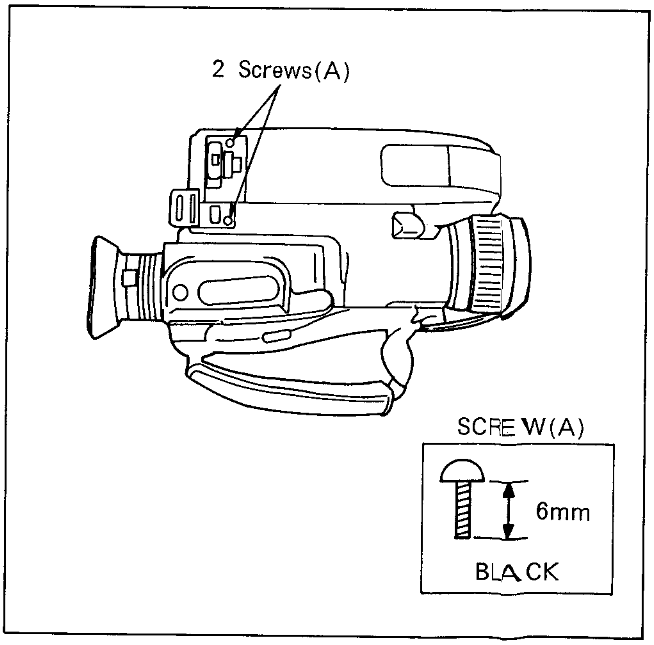

2 Screws(A)
SCREW(A)
6mm
BLACK

Fig. D3

3. Removal of Side Case (L) Unit.

1) Remove.....7 Screws(B)
2) Lift the Side Case (L) Unit to arrow mark direction.

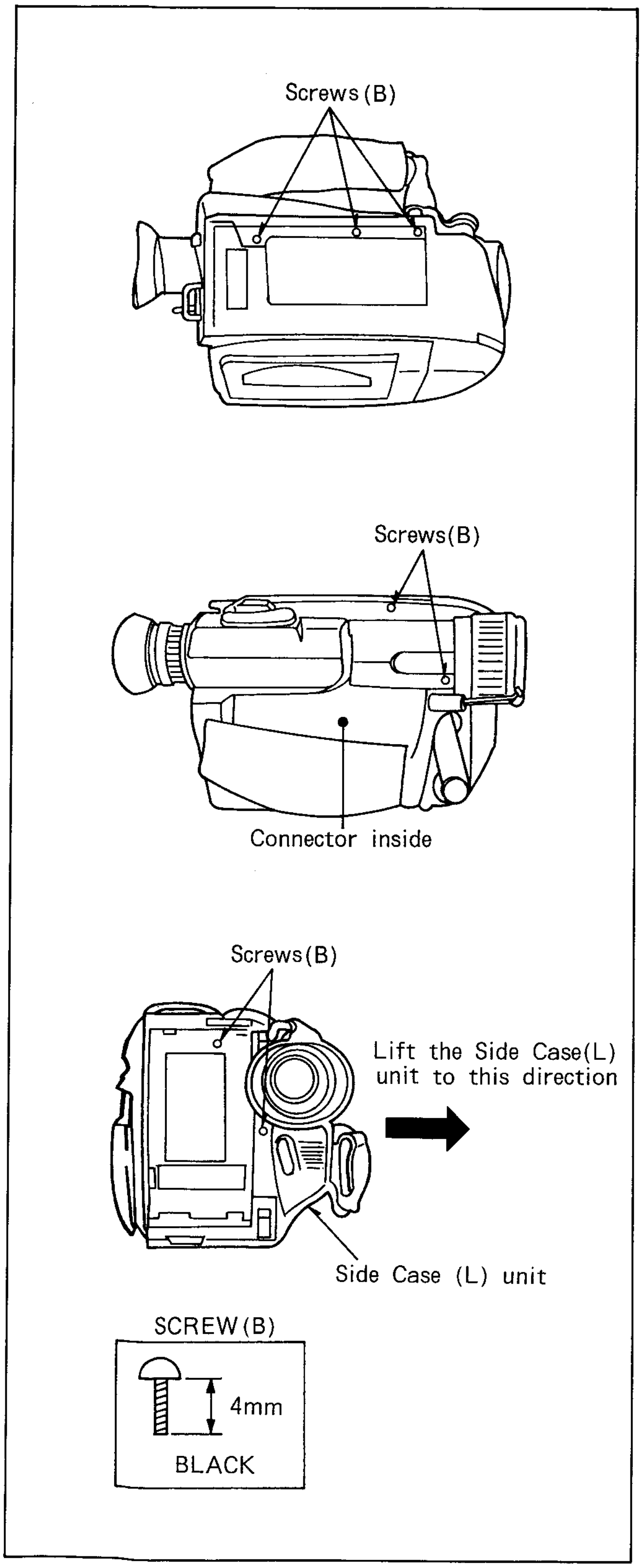

Screws (B)
Screws(B)
Connector inside
Screws(B)
Lift the Side Case(L) unit to this direction
Side Case (L) unit
SCREW(B)
4mm
BLACK

Fig. D4

4. Removal of Front Case unit.

1) Remove.....Screw(C), Screw(D)
2) Release...Locking portion(E)

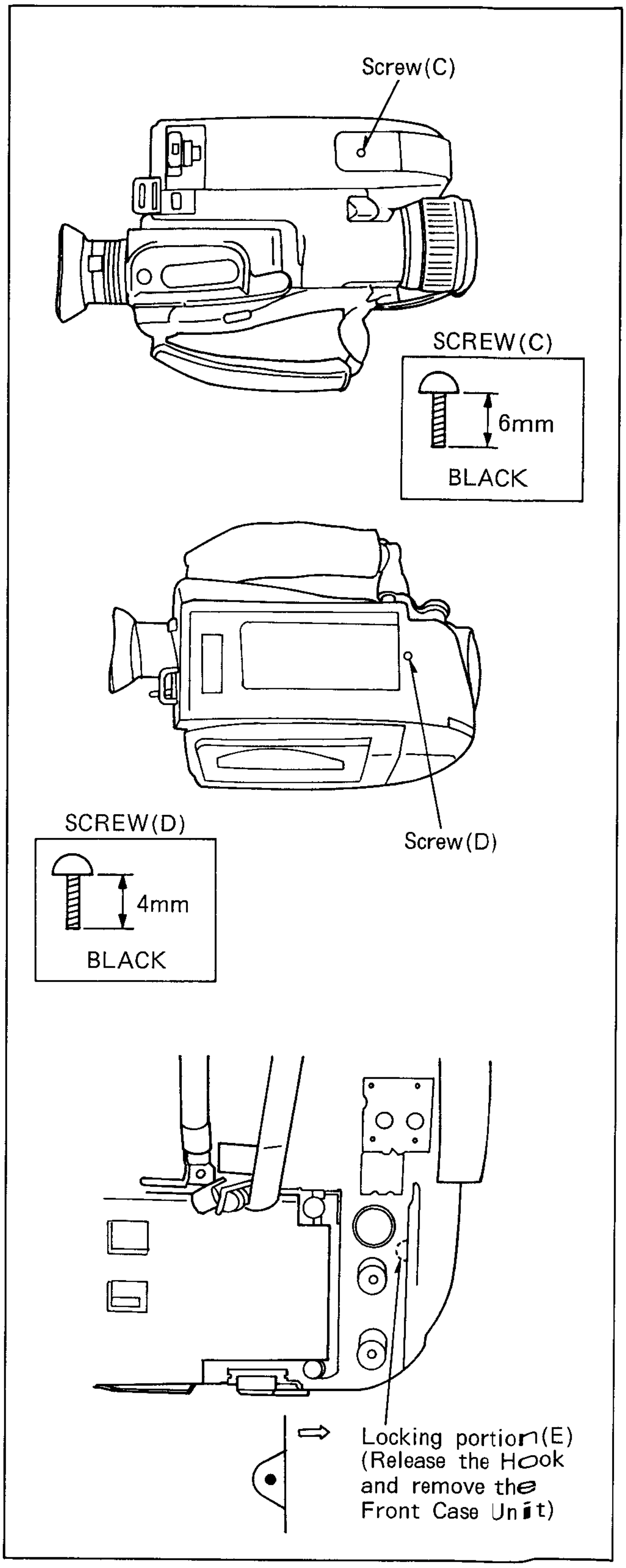

Screw(C)
SCREW(C)
6mm
BLACK
SCREW(D)
4mm
BLACK
Screw(D)
Locking portion(E)
(Release the Hook and remove the Front Case Unit)

Fig. D5

5. Removal of Side Case (R) unit.

1) Remove.....Flexible cable(F),(G)
2) Remove.....Battery Case(H)
3) Remove.....3 Screws(I), 2 Screws(J)
4) Open the Cassette cover
5) Slide the Side case (R) unit while lifting up the portion(K) little bit.

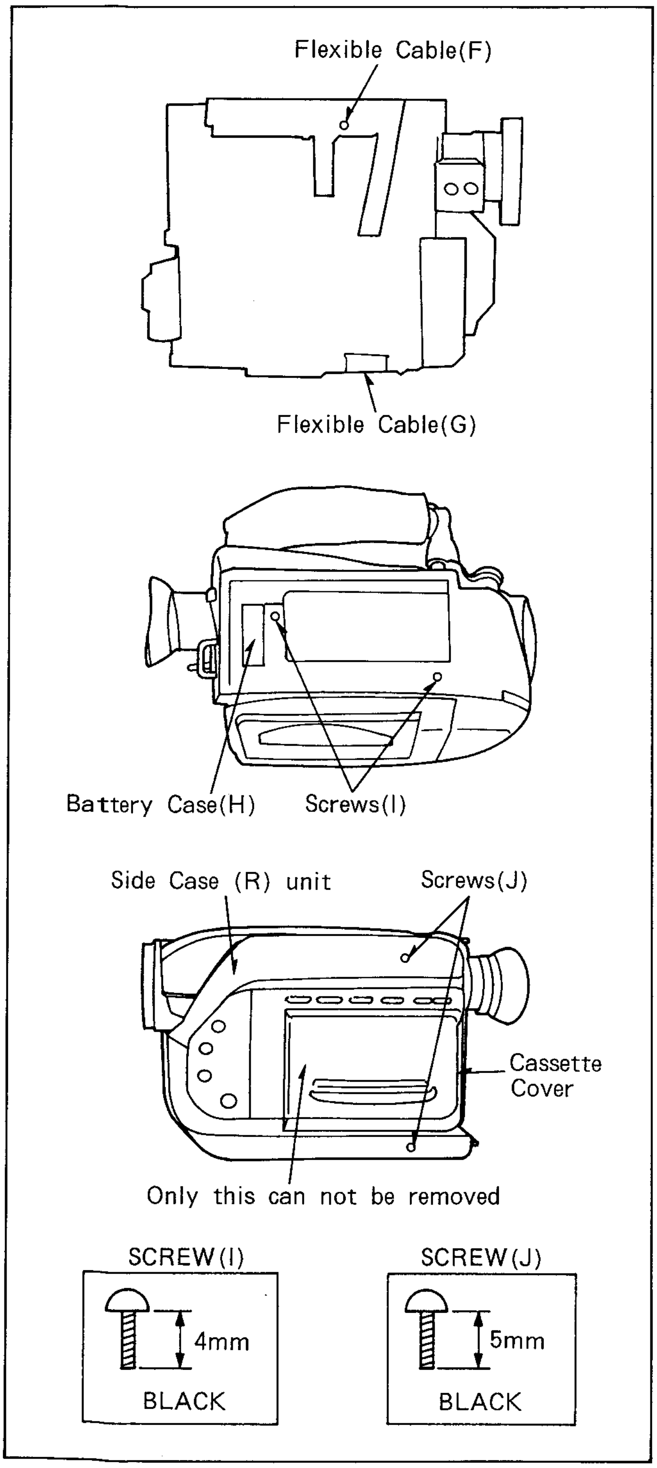

Flexible Cable(F)
Flexible Cable(G)
Battery Case(H)
Screws(I)
Side Case (R) unit
Screws(J)
Cassette Cover
Only this can not be removed
SCREW(I)
4mm
BLACK
SCREW(J)
5mm
BLACK

Fig. D6-1

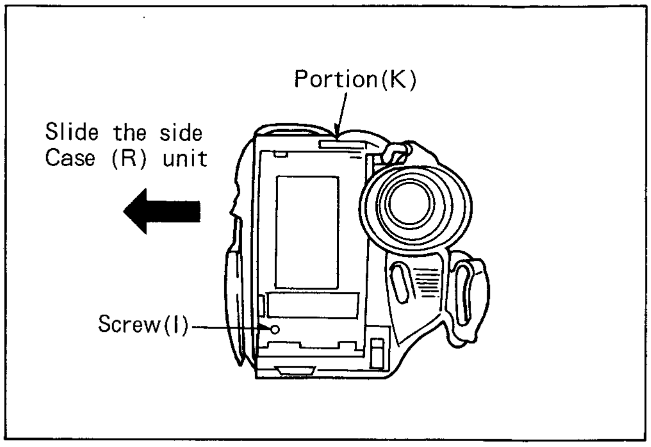

Portion(K)
Slide the side Case (R) unit
Screw(I)

Fig. D6-2

6. Removal of Camera unit.

1) Remove.......3 Screws(L)
2) Disconnect...3 Flexible connectors(M)
3) Lift up the Camera unit to arrow mark direction.

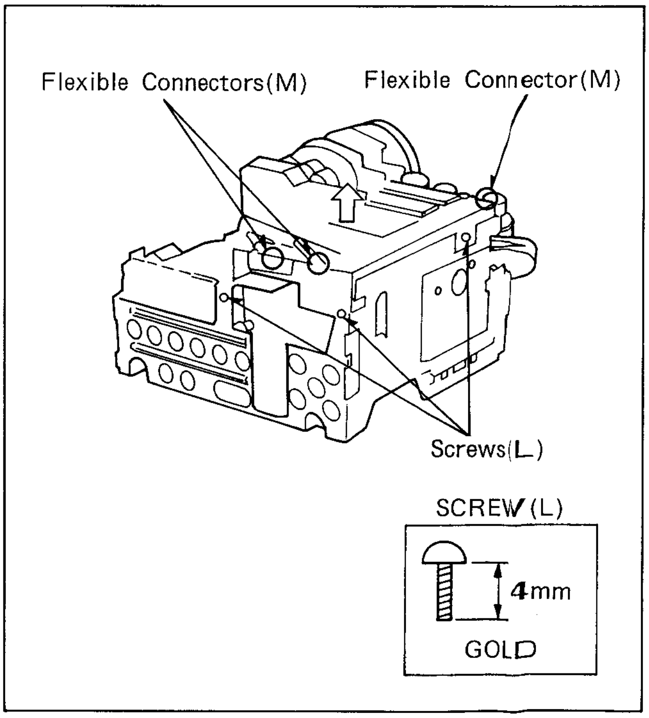

Flexible Connectors(M)
Flexible Connector(M)
Screws(L)
SCREW(L)
4mm
GOLD

Fig. D7

7. Removal of Main C.B.A.

1) Disconnect...4 Flexible Connectors
2) Remove.......2 Screws(N)
3) Disconnect... 1 direct connected connector(O) (Lift up the C.B.A.)
4) Slide the Main C.B.A. to arrow mark direction and remove it.

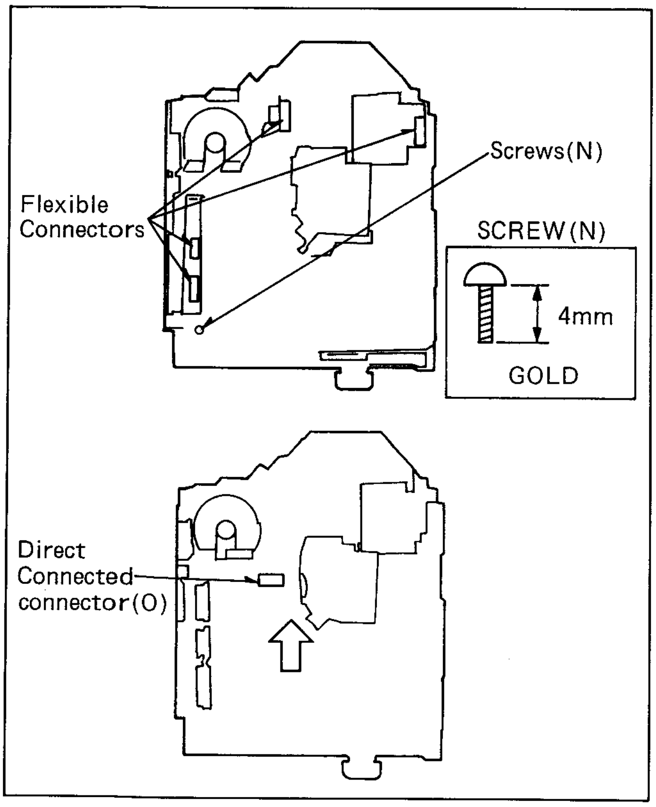

Flexible Connectors
Screws(N)
SCREW(N)
4mm
GOLD
Direct Connected connector(O)

Fig. D8

8. Removal of Frame(upper)

1) Remove.....3 Screws(P)
2) Lift the Frame up

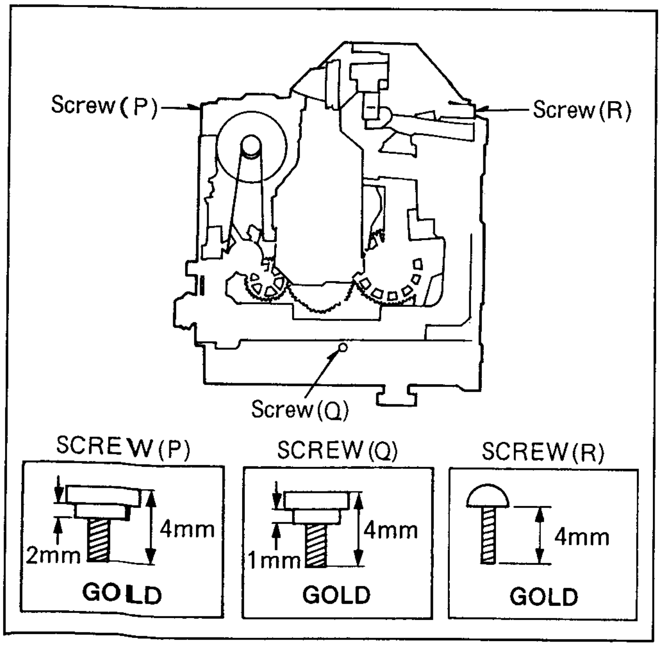

Screw(P)
Screw(R)
Screw(Q)
SCREW(P)
2mm
4mm
GOLD
SCREW(Q)
1mm
4mm
GOLD
SCREW(R)
4mm
GOLD

Fig. D9

2-2. DISASSEMBLY PROCEDURES OF MECHANISM

1. Removal of Cassette Holder Unit.

(1) Unsolder following flexible connectors on the bottom side.

(1) FLEXIBLE CONNECTOR TO SUPPLY PHOTO TR.
(2) FLEXIBLE CONNECTOR TO TAKE UP PHOTO TR.
(3) FLEXIBLE CONNECTOR TO LOADING MOTOR.
(4) FLEXIBLE CONNECTOR TO SENSOR LED.

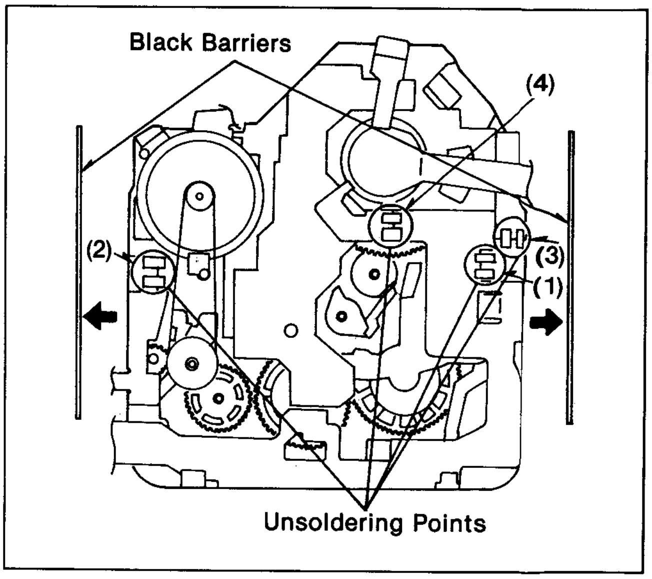

Black Barriers
(4)
(2)
(3)
(1)
Unsoldering Points

Fig. M1

(2) Remove 4 red screws indicated below.

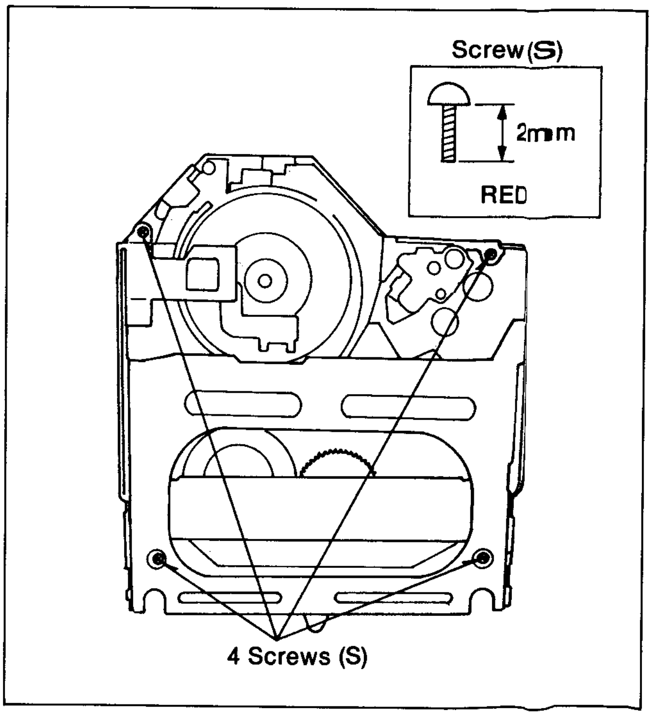

Screw(S)
2mm
RED
4 Screws (S)

Fig. M2

(3) Release Eject Lock Lever and take out Cassette Holder Unit.

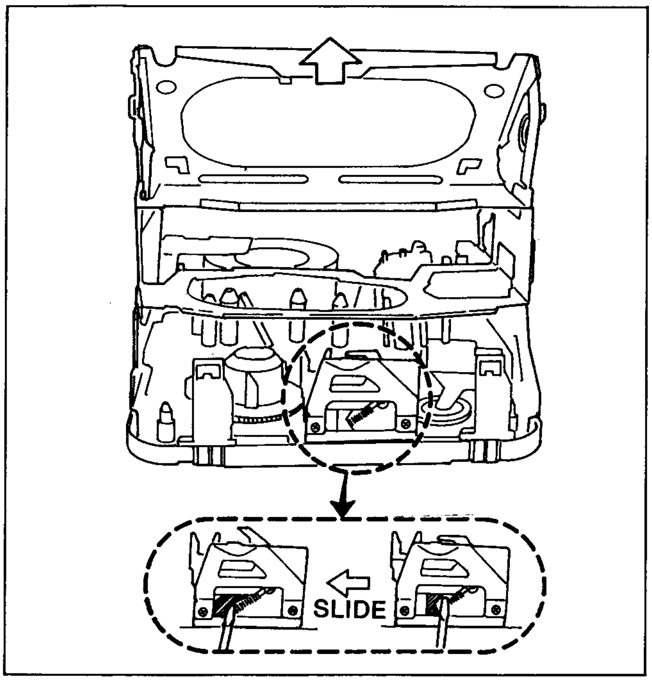


Fig. M3

2. REMOVAL OF DD CYLINDER UNIT.

Note: *
Upper Cylinder Unit is not replaceable on it's own. So only DD Cylinder Unit is available for ordering service parts.

(1) Remove RT (Rotary Transformer) Connector by using a screw driver.
(2) Remove 3 screws to take out DD Cylinder Unit.

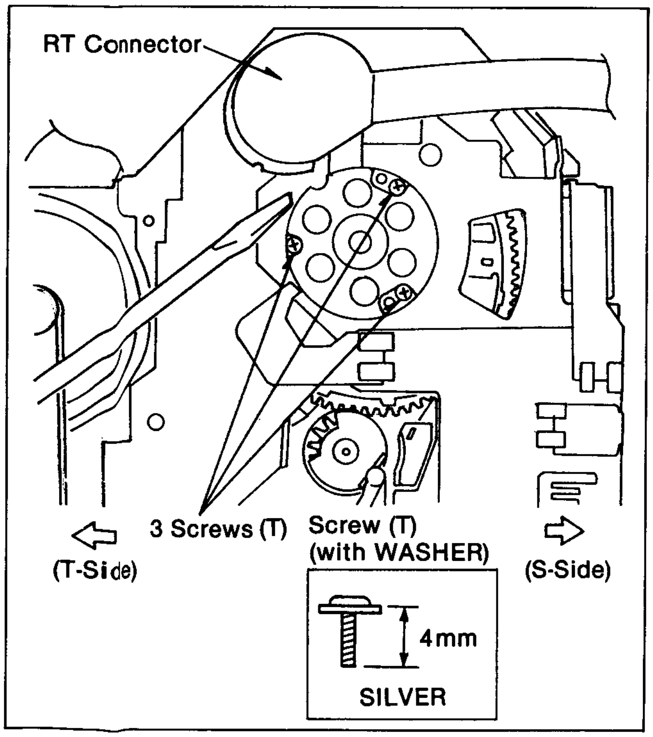

RT Connector
3 Screws (T)
Screw (T)
(with WASHER)
(T-Side)
(S-Side)
4mm
SILVER

Fig. M4

3. REMOVAL OF S-RAIL UNIT, LOADING MOTOR UNIT & TENSION REGULATOR UNIT.

(1) Move tape loading Posts(S1, T1 and T2) half way in the tape loading direction by applying 1.5DC to Loading Motor.

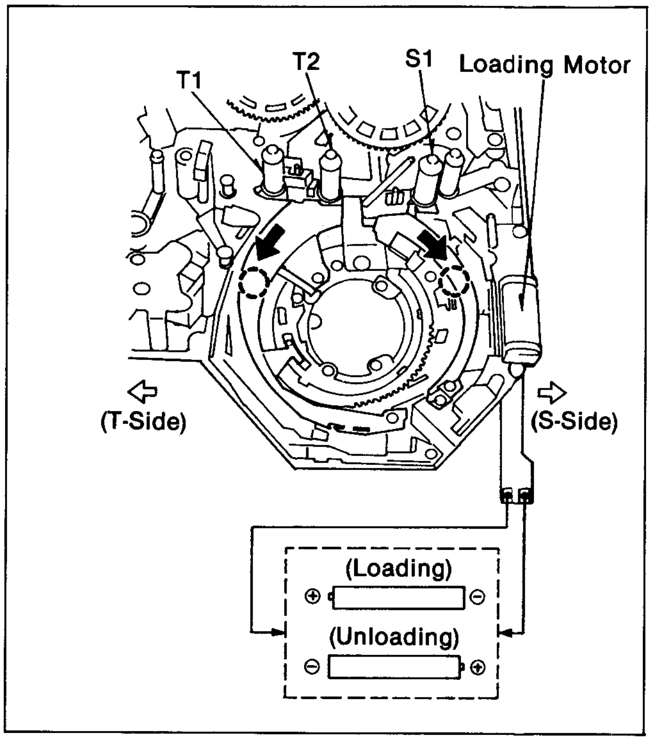

T1
T2
S1
Loading Motor
(T-Side)
(S-Side)
(Loading)
⊕
⊖
(Unloading)
⊖
⊕

Fig. M5

(2) Remove 2 screws and take out S-Rail Unit.

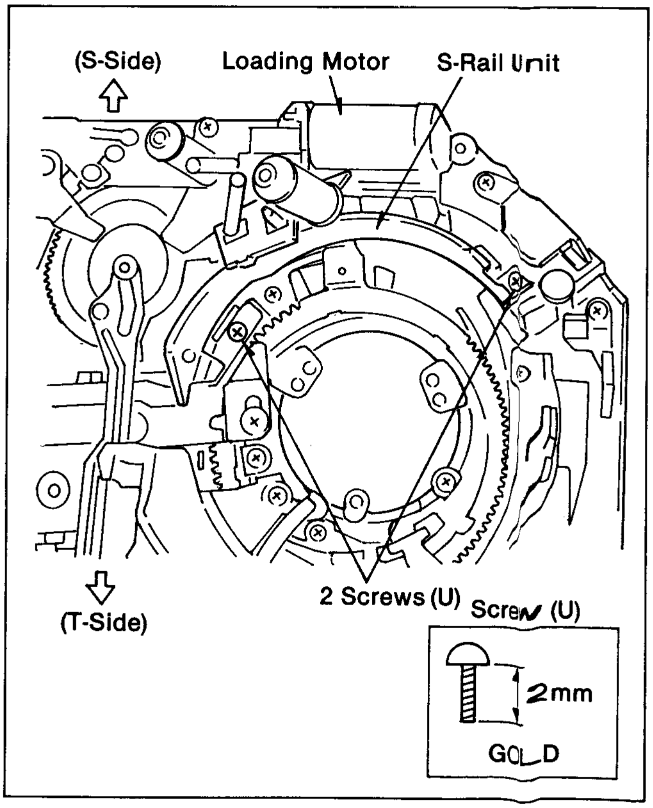

(S-Side)
Loading Motor
S-Rail Unit
(T-Side)
2 Screws (U)
Screw (U)
2mm
GOLD

Fig. M6

(3) Remove 2 screws (Slightly move Loading Posts in the unloading direction.) and take out Loading Motor Unit.

(4) Unhook the spring(* Remember the original hooking position for reinstalling after), remove a washer and take out Tension Regulator Unit.
Don't lose a spacer underneath.

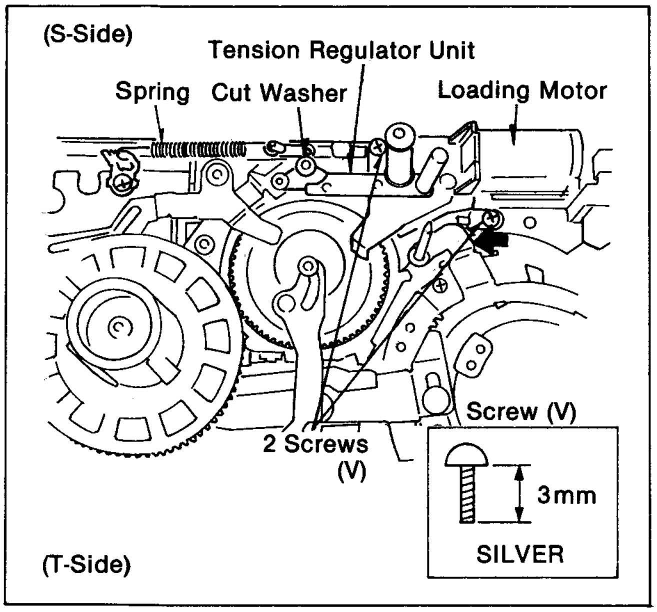

(S-Side)
Tension Regulator Unit
Spring
Cut Washer
Loading Motor
Screw (V)
2 Screws
(V)
3mm
SILVER
(T-Side)

Fig. M7

4. REMOVAL OF SUPPLY REEL TABLE, EJECT LEVER UNIT AND PAD ARM.

(1) Remove a washer and take out Supply Reel Table. Don't lose a spacer underneath.

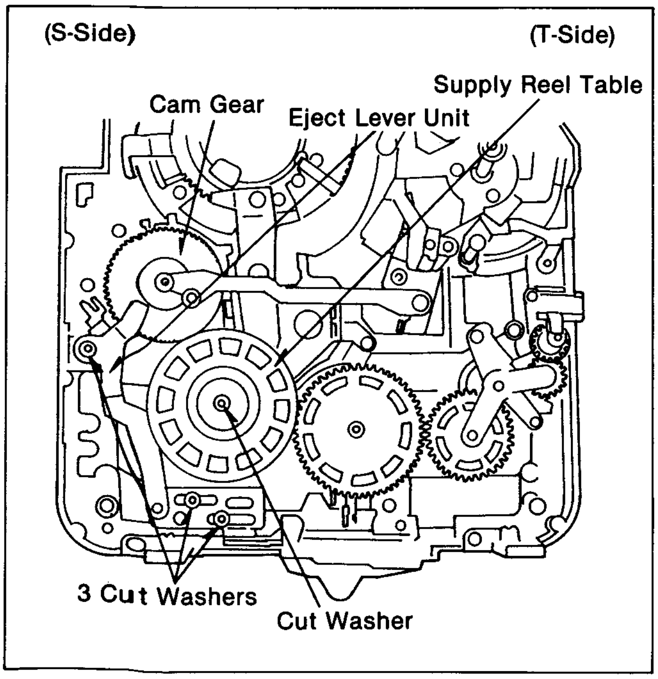

(S-Side)
(T-Side)
Supply Reel Table
Cam Gear
Eject Lever Unit
3 Cut Washers
Cut Washer

Fig. M8

(2) Remove 3 washers, 2 screws on Eject Lock Base to make a clearance (* Eject Lock Base is soldered on the flexible P.C. Board.) and take out Eject Lock Lever.

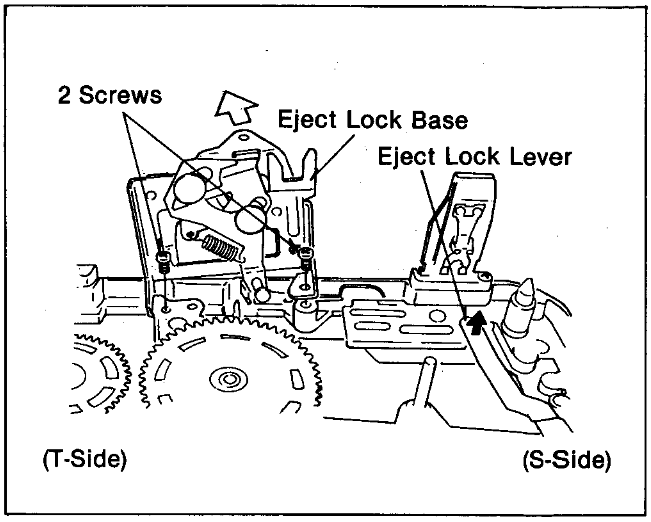

2 Screws
Eject Lock Base
Eject Lock Lever
(T-Side)
(S-Side)

Fig. M9

(3) Remove 2 washers, pull Pinch Drive Arm to the left (S–side) and take it out.

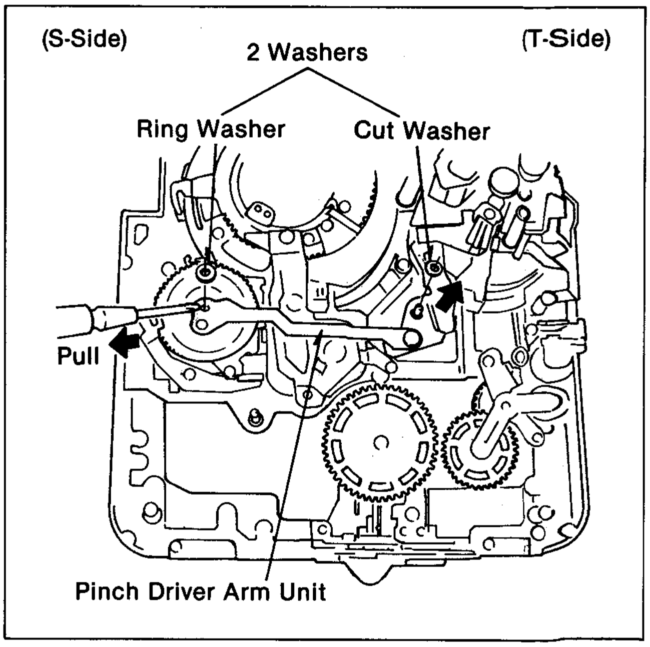

(S-Side)
2 Washers
(T-Side)
Ring Washer
Cut Washer
Pull
Pinch Driver Arm Unit

Fig. M10

(4) Remove a washer and take out Pad Arm.

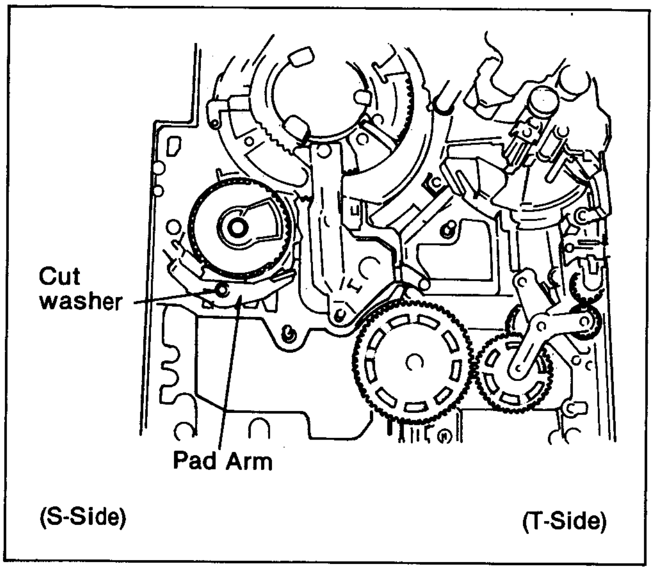

Cut washer
Pad Arm
(S-Side)
(T-Side)

Fig. M11

5. REMOVAL OF T−RAIL UNIT, SWING ARM UNIT, LOADING UNIT AND MODE SW UNIT

(1) Remove 2 screws and take out T−Rail Unit. (* Flexible Connector of Sensor LED has to be unsoldered on the bottom side.)

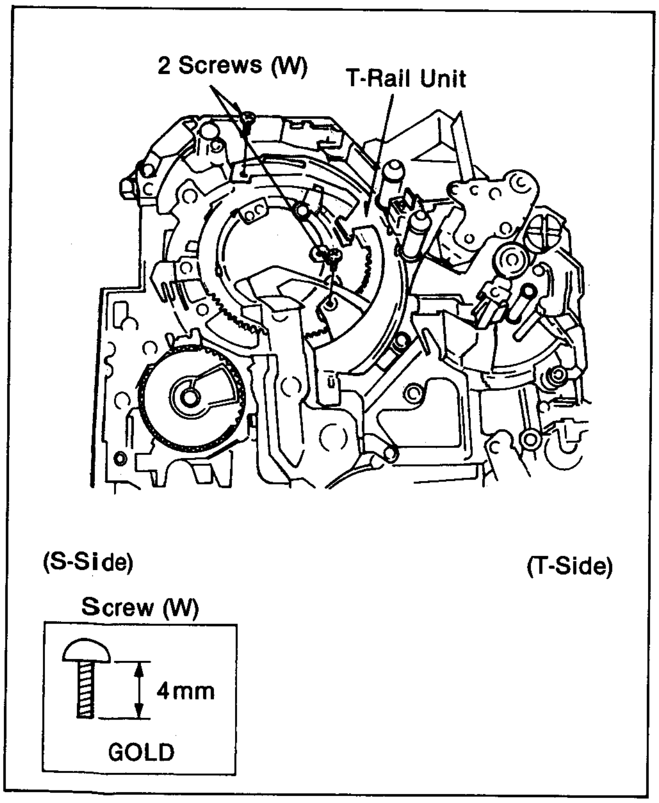

2 Screws (W)
T-Rail Unit
(S-Side)
(T-Side)
Screw (W)
4mm
GOLD

Fig. M12

Caution:
Do not touch inside cam Gear and keep the cam Gear away from grease and dusts.

(2) Remove 2 screws, take out Holder Angle and Swing Arm Unit.

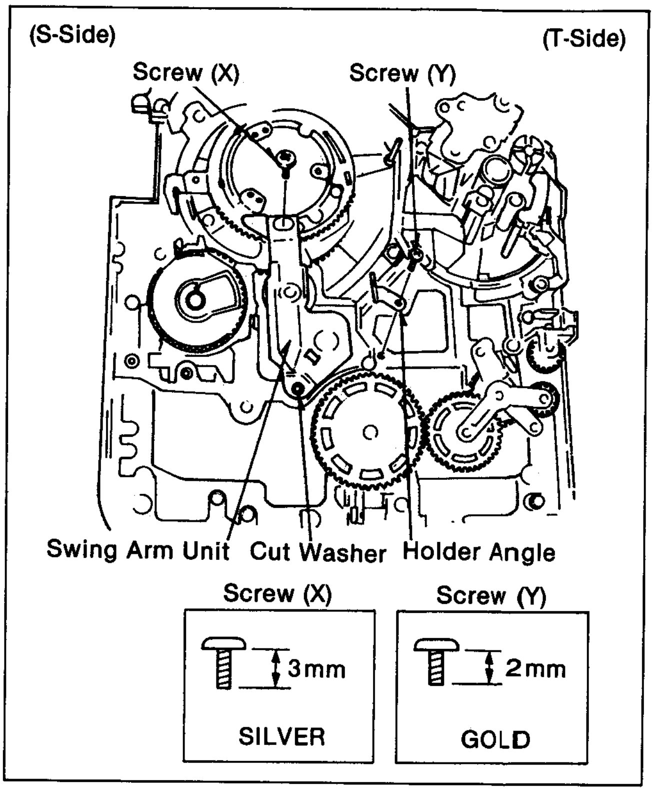

(S-Side)
(T-Side)
Screw (X)
Screw (Y)
Swing Arm Unit
Cut Washer
Holder Angle
Screw (X)
3mm
SILVER
Screw (Y)
2mm
GOLD

Fig. M13

(3) Remove 5 screws.

(4) Loosen Screw (a) to make a clearance and take out Loading Unit.

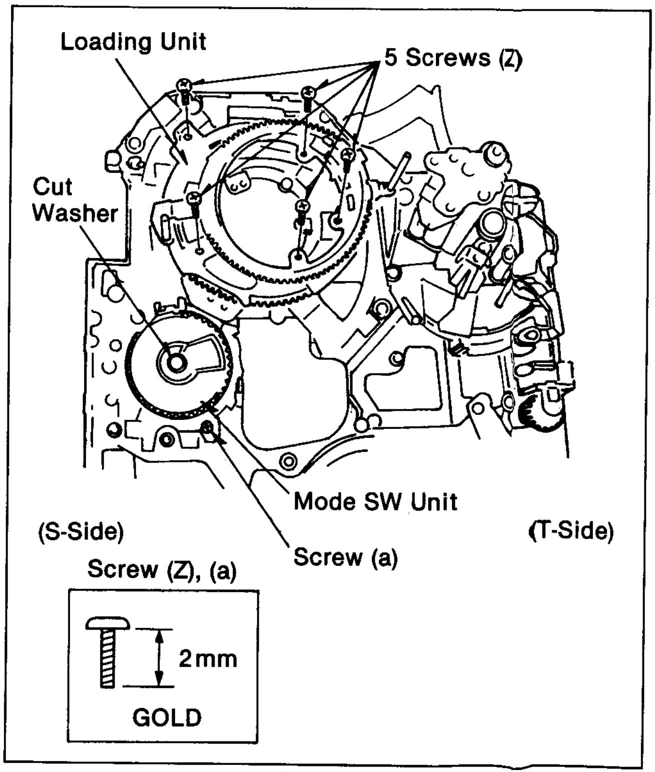

Loading Unit
5 Screws (Z)
Cut Washer
Mode SW Unit
(S-Side)
(T-Side)
Screw (a)
Screw (Z), (a)
2mm
GOLD

Fig. M14

(5) Remove screw (a) and cut washer to take out mode SW unit. (※Mode SW Base is soldered on the flexible P.C. Board).

2-3. ASSEMBLY AND PHASE ADJUSTMENT PROCEDURES OF MECHANISM

1. ASSEMBLY AND PHASE ADJUSTMENT OF LOADING UNIT.

(1) Install Loading Unit and tighten 5 screws.
(2) Adjust mechanical phase so that phase marks (See-through holes) meet on both supply and take up sides as shown below.

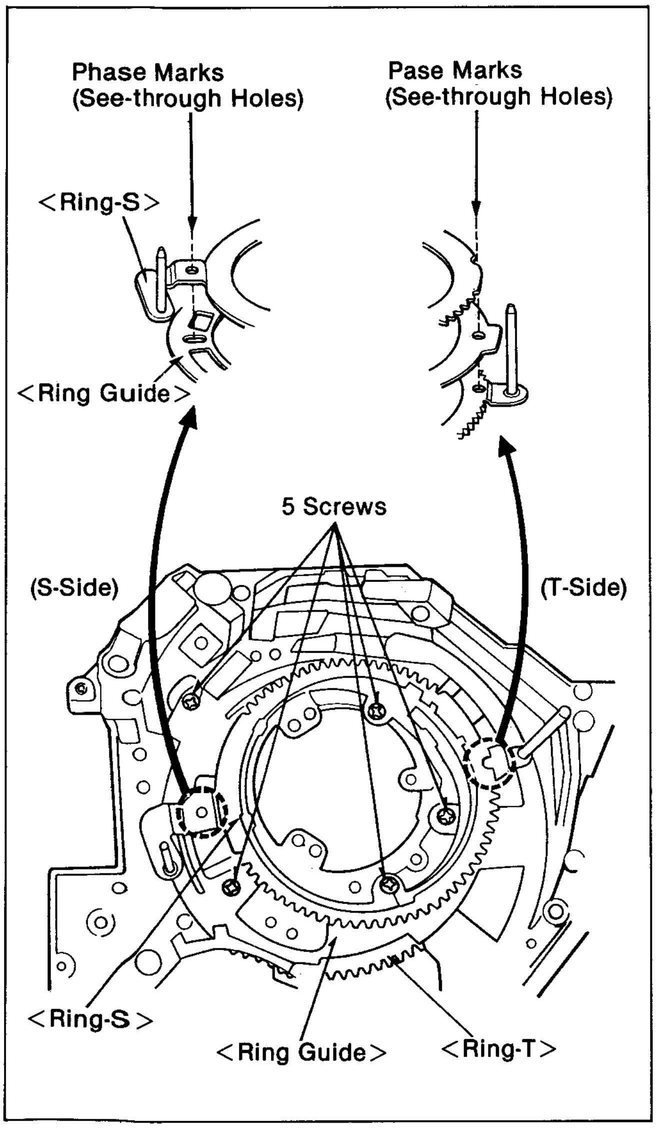

Phase Marks (See-through Holes)
Pase Marks (See-through Holes)
<Ring-S>
<Ring Guide>
5 Screws
(S-Side)
(T-Side)
<Ring-S>
<Ring Guide>
<Ring-T>

Fig. M15

2. ASSEMBLY AND PHASE ADJUSTMENT OF CAM GEAR.

(1) Install Cam Gear so that uneven cog portion meets the phase mark on the chassis and put the washer.

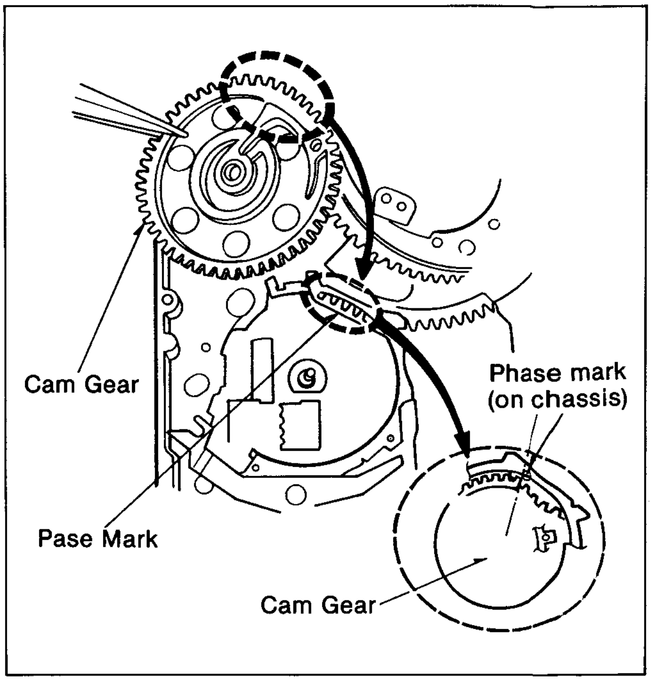

Cam Gear
Phase mark (on chassis)
Pase Mark
Cam Gear

Fig. M16

3. ASSEMBLY OF PENDULUM ARM UNIT.

(1) Install Swing Arm Unit and tighten 2 screws with the holder angle.
(2) After that, Confirm that the phase mark on Loading Ring−T can be seen through the square cutout of Swing Arm Unit. Also, the phase mark of Swing Arm Unit (V−cutout) is meeting the phase mark on Loading Ring−S Unit on the bottom side. Those phase marks naturally come to the specific positions, if the previous phase adjustments have been done correctly.

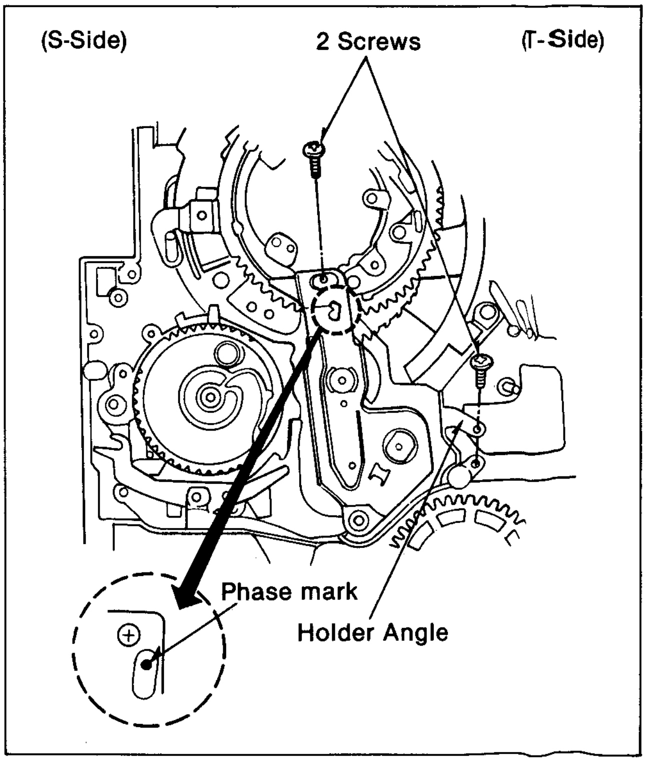

(S-Side)
2 Screws
(T-Side)
Phase mark
Holder Angle

Fig. M17

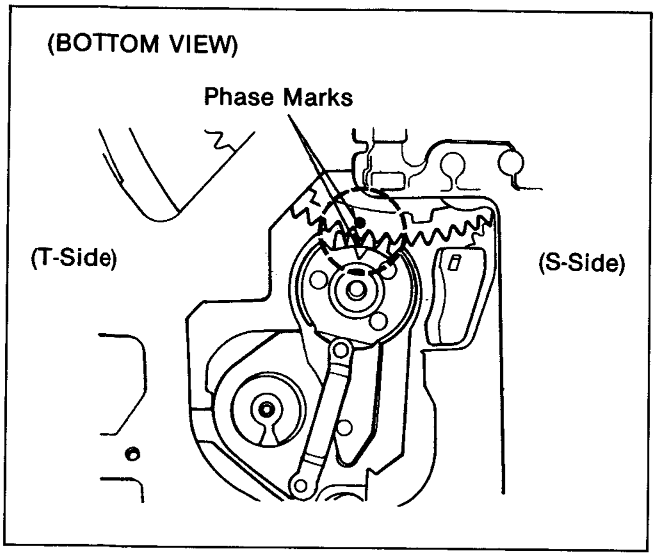

(BOTTOM VIEW)
Phase Marks
(T-Side)
(S-Side)

Fig. M18

4. ASSEMBLY OF LOADING UNIT PINCH DRIVE ARM UNIT AND CONFIRMATION OF MECHANICAL MOVEMENT

(1) Install Loading Motor Unit and tighten one screw. (one more screw has to be tightened after installing Pinch Drive Arm Unit, which is explained after.)

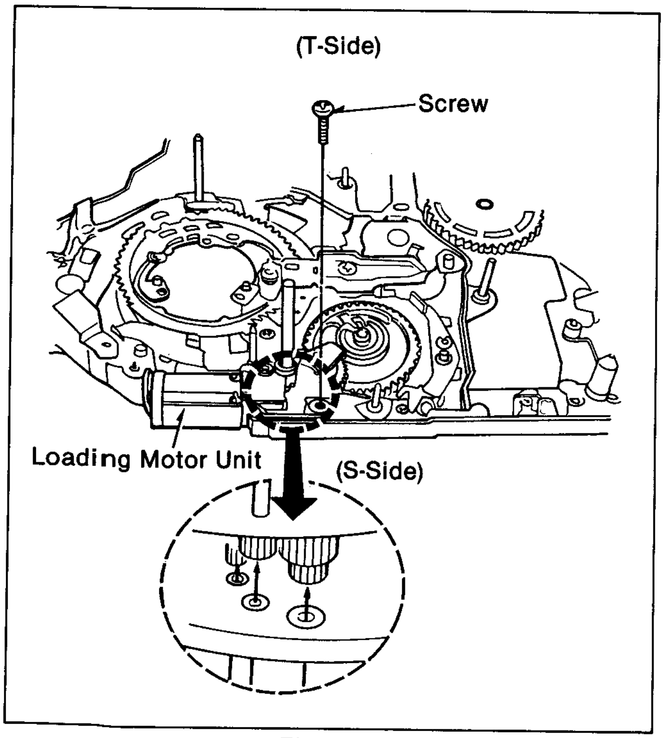

(T-Side)
Screw
Loading Motor Unit
(S-Side)

Fig. M19

(2) Install Pinch Drive Arm Unit and put washer (A).

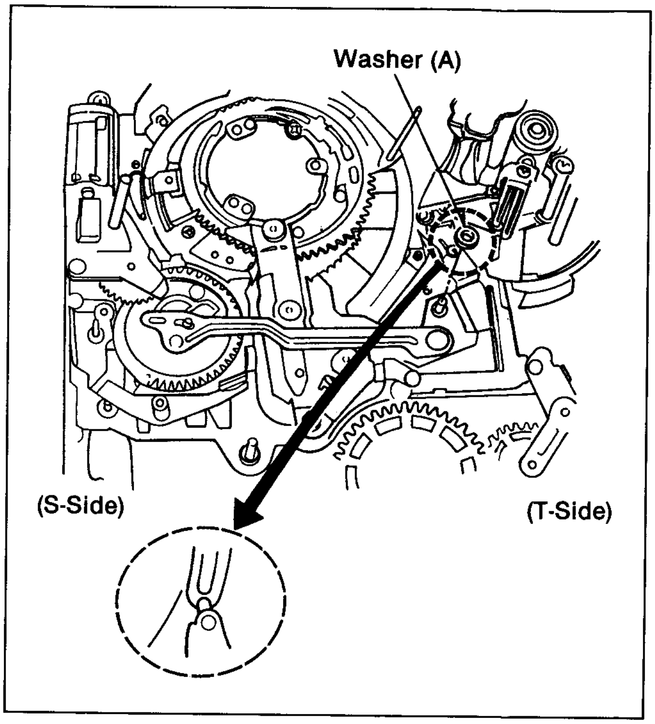

Washer (A)
(S-Side)
(T-Side)

Fig. M20

(3) Move Pinch Roller to the unloading position by finger and put washer (B).

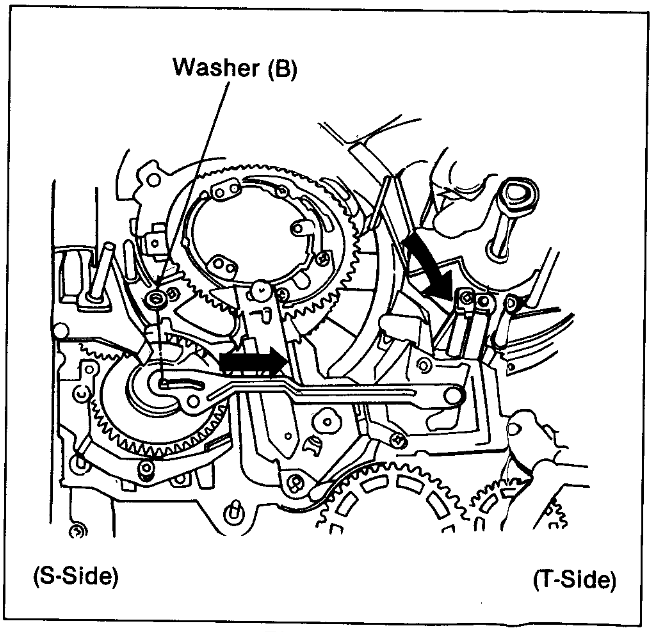

Washer (B)
(S-Side)
(T-Side)

Fig. M21

(4) Slightly move Loading Ring-S in the unloading direction by applying 1.5VDC to Loading Motor and tighten a screw.

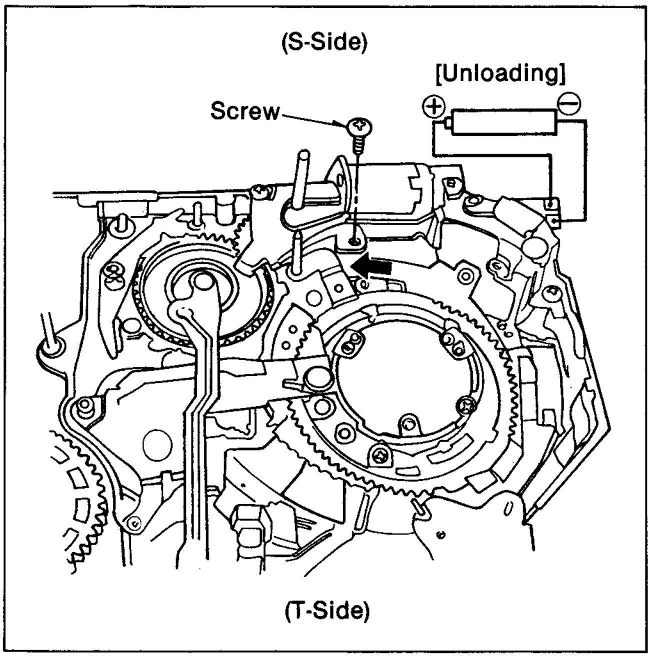

(S-Side)
[Unloading]
Screw
⊕
⊖
(T-Side)

Fig. M22

(5) Confirmation of Mechanical Movement and phase.
In this condition, confirm that the mechanism smoothly moves in both loading and unloading directions by changing the polarity of the battery.
After that, move the mechanism back to the phase adjustment position and confirm all phase marks come to each specific position.

5. ASSEMBLY OF S–RAIL UNIT AND T–RAIL UNIT

(1) Install S–Rail Unit passing Link Post of Ring–S through the linking hole of the S–Rail Unit, and tighten 2 screws.

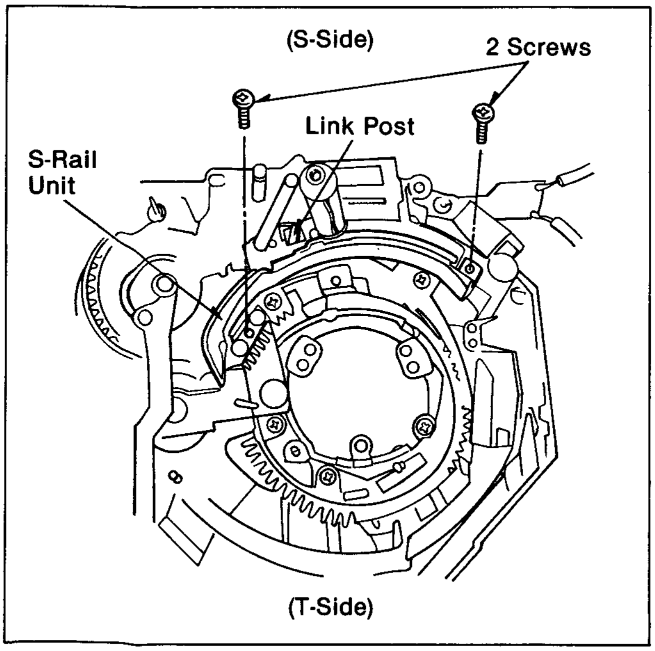

(S-Side)
2 Screws
Link Post
S-Rail Unit
(T-Side)

Fig. M23

(2) In the same way, install T–Rail Unit and tighten 2 screws.
(3) Solder the flexible connector of Sensor LED on the bottom side.

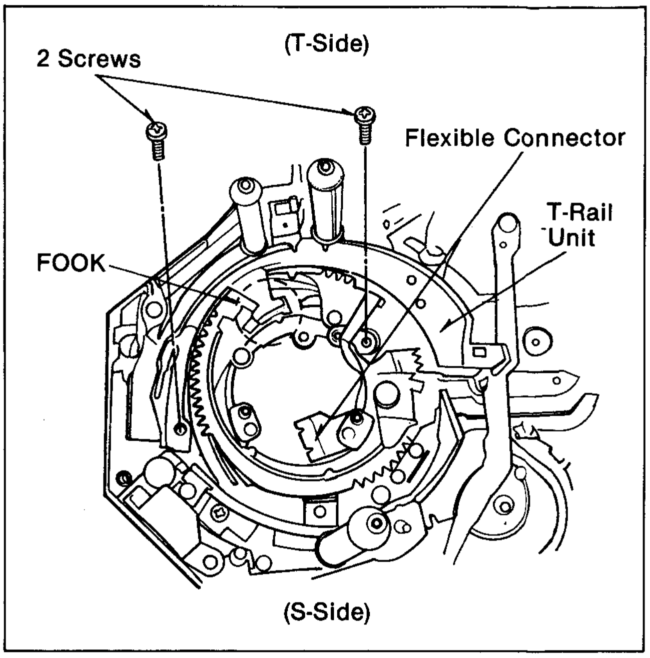

2 Screws
(T-Side)
Flexible Connector
T-Rail Unit
FOOK
(S-Side)

Fig. M24

6. ASSEMBLY OF EJECT LEVER UNIT

(1) Install Eject Lever Unit and link the arm with Eject Lock Base.
(2) Fix Eject Lock Base with 2 screws and Eject Lever Unit with 3 washers.

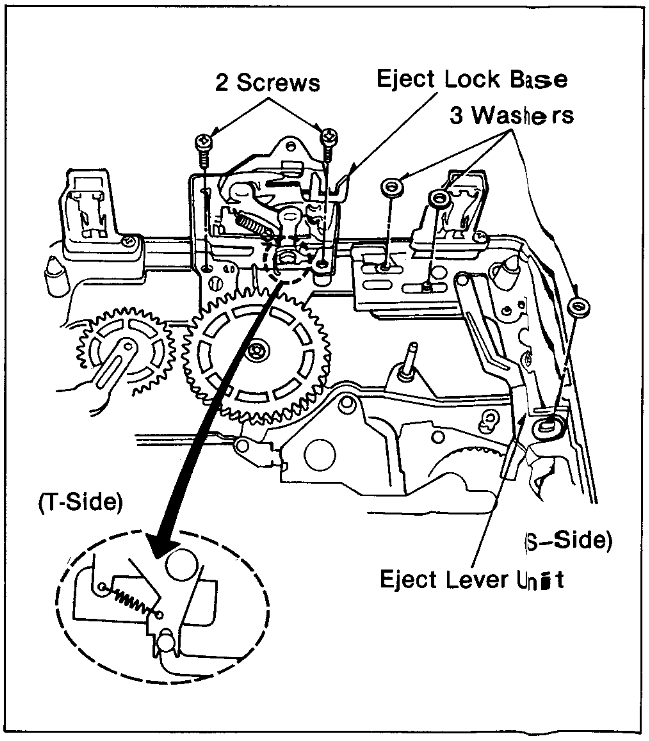

2 Screws
Eject Lock Base
3 Washers
(T-Side)
(S–Side)
Eject Lever Unit

Fig. M25

7. ASSEMBLY OF TENSION REGULATOR UNIT.

(1) Install Tension Regulator Unit so that the guide arm fits in outer inside of Cam Gear.
(2) Put the washer and hook Tenshion Spring to the original position.

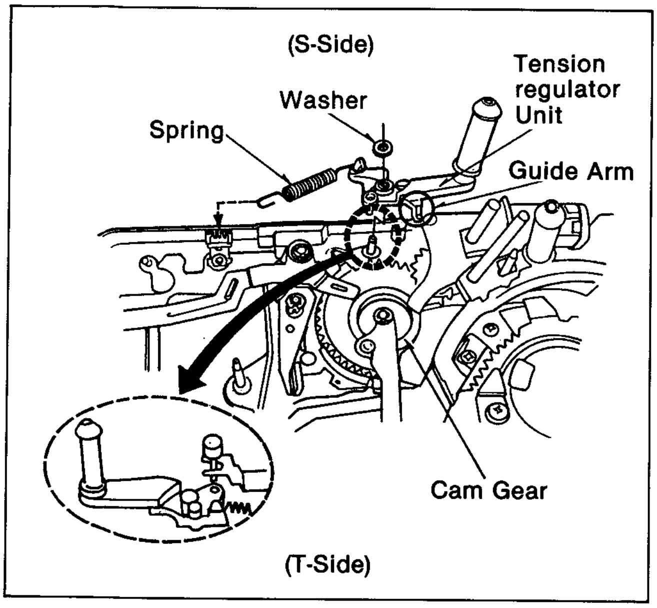

(S-Side)
Tension regulator Unit
Washer
Spring
Guide Arm
Cam Gear
(T-Side)

Fig. M26

8. ASSEMBLY OF SUPPLY REEL TABLE

(1) Install Supply Reel Table and put a washer.

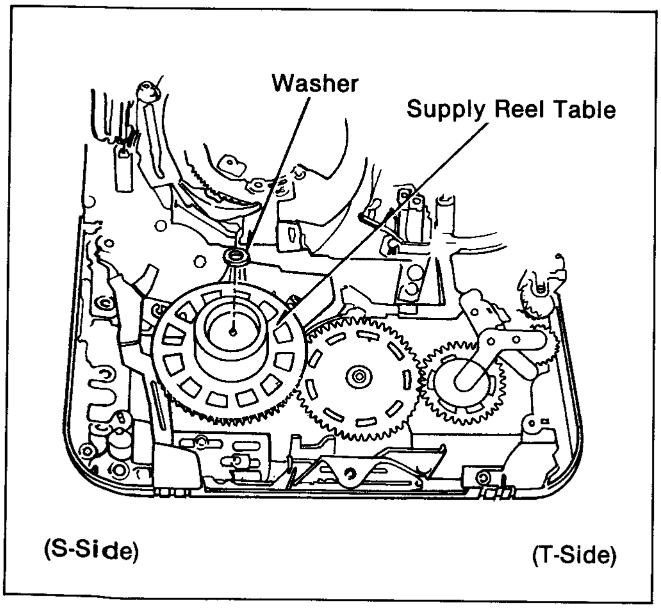

Washer
Supply Reel Table
(S-Side)
(T-Side)

Fig. M27

9. ASSEMBLY OF DD CYLINDER UNIT

(1) Install DD Cylinder unit so that the fixating pins fit into the fixating holes, and tighten 3 screws from the bottom side.

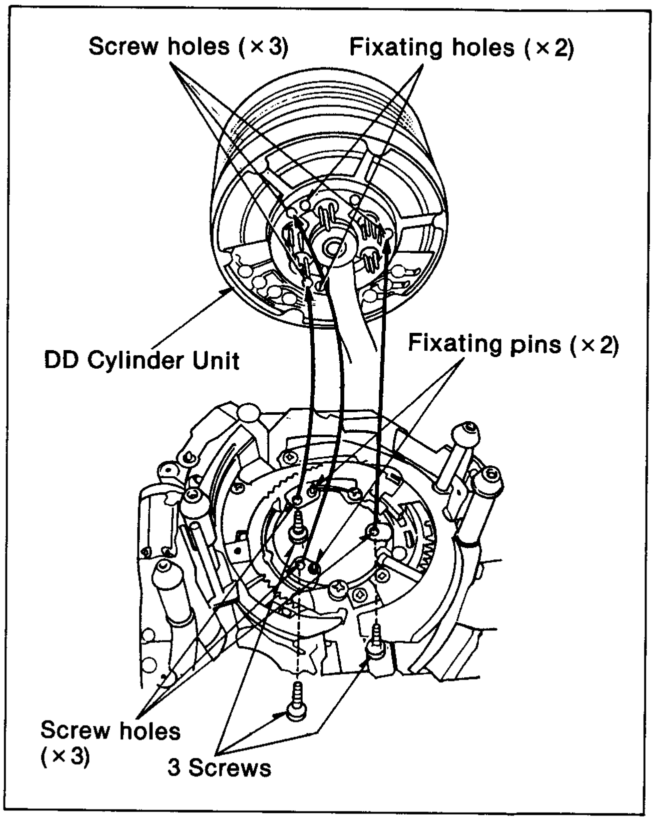

Screw holes (×3)
Fixating holes (×2)
DD Cylinder Unit
Fixating pins (×2)
Screw holes (×3)
3 Screws

Fig. M28

10. ASSEMBLY OF RT CONNECTOR

(1) Hold RT Connector aiming the phase mark of RT Connector (while indication) to the phase mark on the chassis.
(2) Carefully Install the RT Connector passing lead pins of DD Cylinder Unit through each corresponding hole of the RT Connector.

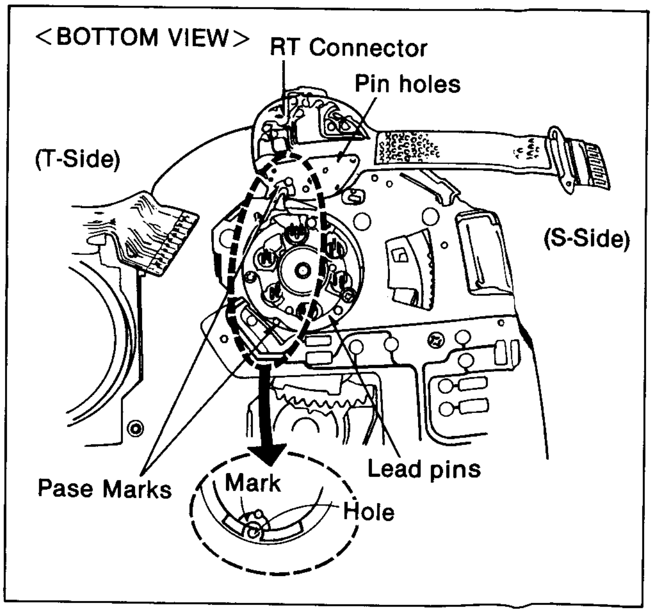

<BOTTOM VIEW>
RT Connector
Pin holes
(T-Side)
(S-Side)
Pase Marks
Mark
Hole
Lead pins

Fig. M29

11. ASSEMBLY OF CASSETTE HOLDER UNIT.

(1) Install Cassette Holder Unit and tighten 4 red screws.
(2) Finally, solder flexible connectors of Supply Photo Sensor, Take up photo Sensor and Loading Motor Unit on the bottom side.

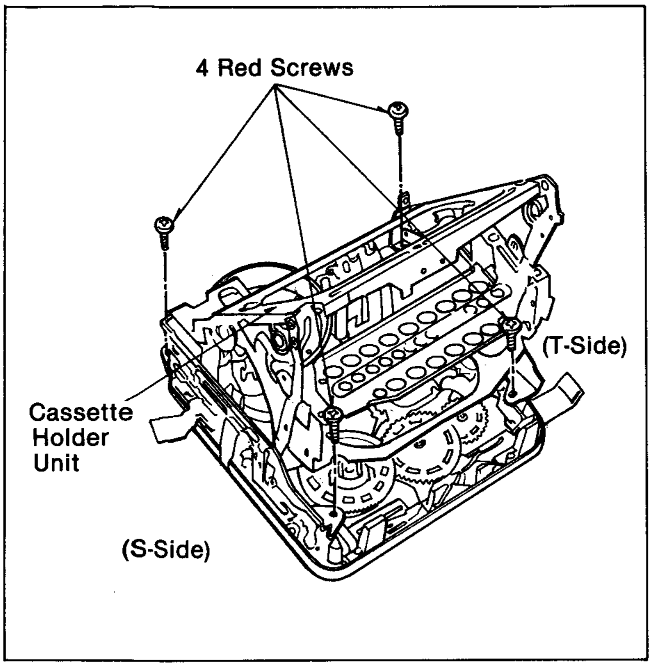

4 Red Screws
(T-Side)
Cassette Holder Unit
(S-Side)

Fig. M30

2-4. INTERCHANGEABILITY ADJUSTMENT

1. BACK TENSION ADJUSTMENT

* Equipment Required
Tension Meter
VHS-C Cassette Tape
Specification 18+3/−1.5g(16.5g~21g)

(1) Play back (remove the cassette tape cover) tape.
(2) Set Tension Meter at the measuring point and read the value.
(3) If the value is out of specification, change the hooking position of Tension Spring.
(4) Install Cassette Holder Unit.

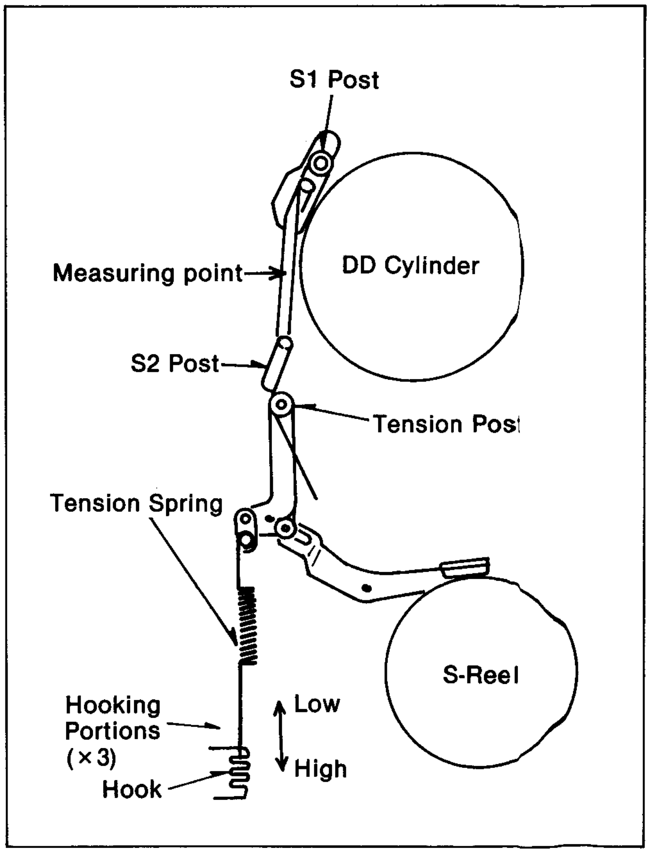

S1 Post
Measuring point
DD Cylinder
S2 Post
Tension Post
Tension Spring
S-Reel
Hooking Portions (×3)
Hook
Low
High

Fig. M31

2. HEIGHT ADJUSTMENT OF TAPE GUIDE POSTS AND A/C HEAD (PRELIMINARY ADJUSTMENT)

Confirmation of Tape Travel

(1) Playback a cassette tape (remove the cassette tape cover) and confirm that the tape travels without curling at upper and lower guides on posts S1,T1,T2 and T3.

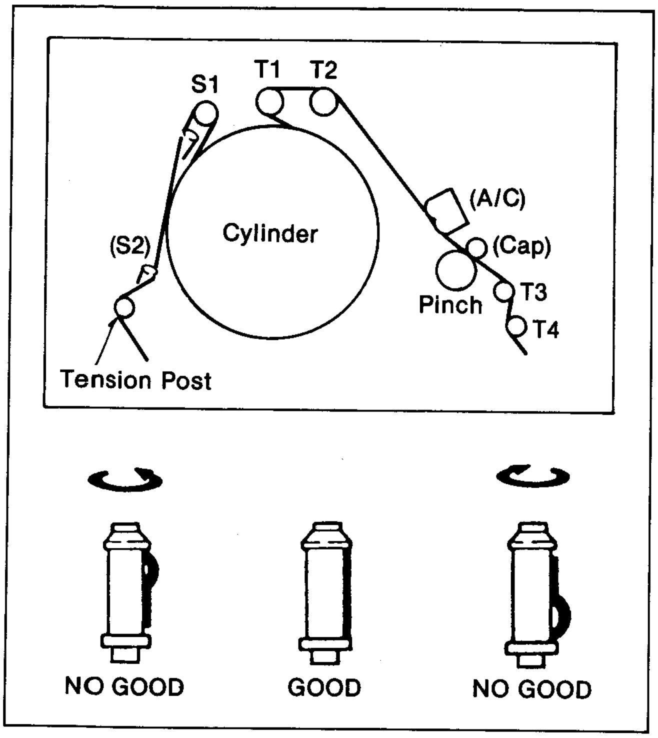

S1
T1
T2
(A/C)
(S2)
Cylinder
(Cap)
Pinch
T3
T4
Tension Post
NO GOOD
GOOD
NO GOOD

Fig. M32

(2) If curling is apparent, adjust the height of posts by turning the top of post With Hex Wrench.

(3) Looking at the lower edge of the control Head with the tape in motion, ensure that lower edge of the tape runs 0.25mm above the lower edge of control Head. If it doesn't, turn the A/C head height Adjustment Nut slightly in either direction as necessary to correct it.

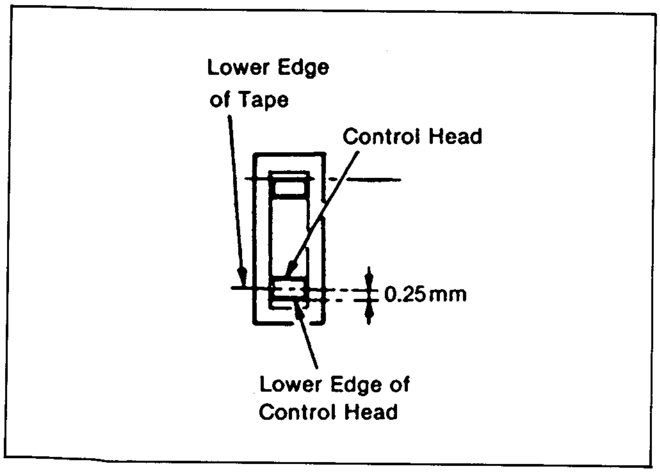

Lower Edge of Tape
Control Head
0.25mm
Lower Edge of Control Head

Fig. M33

3. TAPE INTERCHANEABILITY ADJUSTMENT

NOTE:

To perform these adjustments, make sure that the tracking control is set in the fixed position by Pressing both tracking Up/Down switches at the same time.

* Equipment Required
Dual Trace Oscilloscope
Alignment tape (VFM8180HUPF)

[AZIMUTH ADJUSTMENT OF A/C HEAD]

(1) Connect the oscilloscope to Audio Line Output.

(2) Play back the Monoscope portion (6KHZ,MONO) of the Alignment tape.

(3) Adjust the Azimuth Adjustment screw on the A/C Head Unit so that output level is at a maximum.

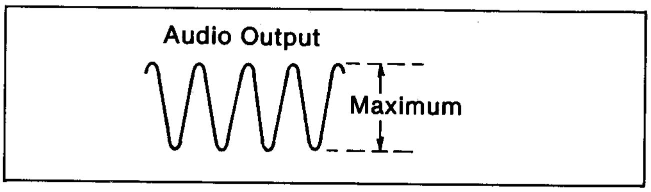

Audio Output
Maximum

Fig. M34

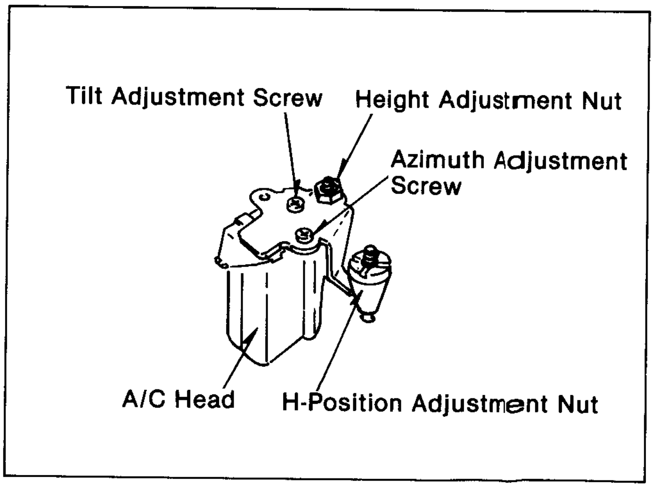

Tilt Adjustment Screw
Height Adjustment Nut
Azimuth Adjustment Screw
A/C Head
H-Position Adjustment Nut

Fig. M35

[HORIZONTAL POSITION ADJUSTMENT OF A/C HEAD]

(1) Connect the oscilloscope to TP8002 or Pin 24 IC3001.
(2) Playback the monoscope portion of the alignment tape.
(3) Adjustment horizontal position by turning H–Position Adjustment Nut so that the envelope level is at a maximum.

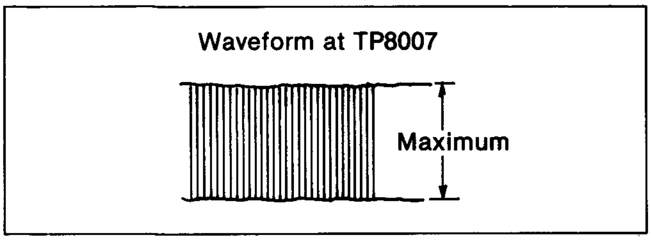

Waveform at TP8007
Maximum

Fig. M36

[CONFIRMATION/ADJUSTMENT OF ENVELOPE]

(1) Set the tracking control to the fixed position by pressing both tracking control Up/Down Switches at the same time, and connect the Oscilloscope to TP8002 or Pin 24 of IC3001.
(2) Play back the Monoscope portion of the Alignment Tape and adjust the height of S1 and T1 posts watching the scope display so that the RF envelope becomes as flat as possible.
(3) When the RF envelope is lacked at the beginning of the track, adjust height of S1 post.

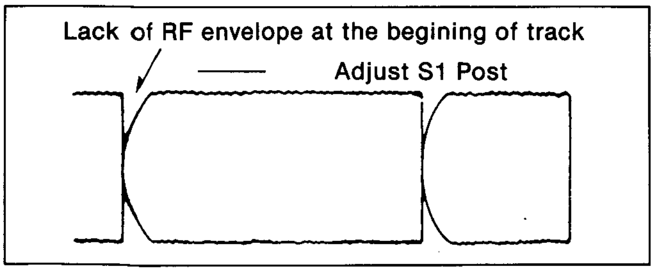

Lack of RF envelope at the begining of track
Adjust S1 Post

Fig. M37

(4) When the RF envelope is lacked at the end of the track, adjust height of T1 post.

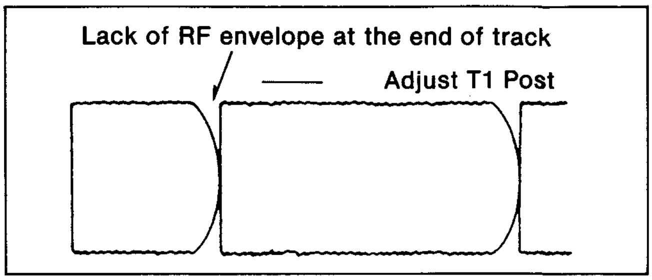

Lack of RF envelope at the end of track
Adjust T1 Post

Fig. M38

(5) When S2 and T1 Posts are adjusted properly, there is no lack of RF Envelope at the beginning or end of the track as shown below.

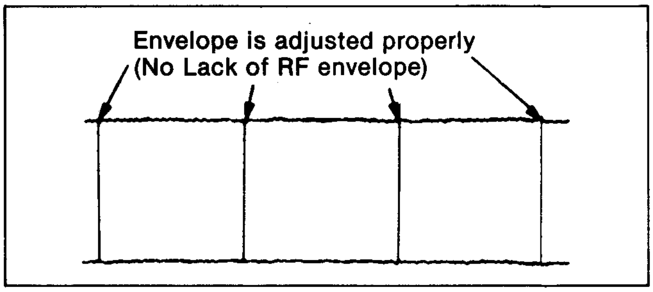
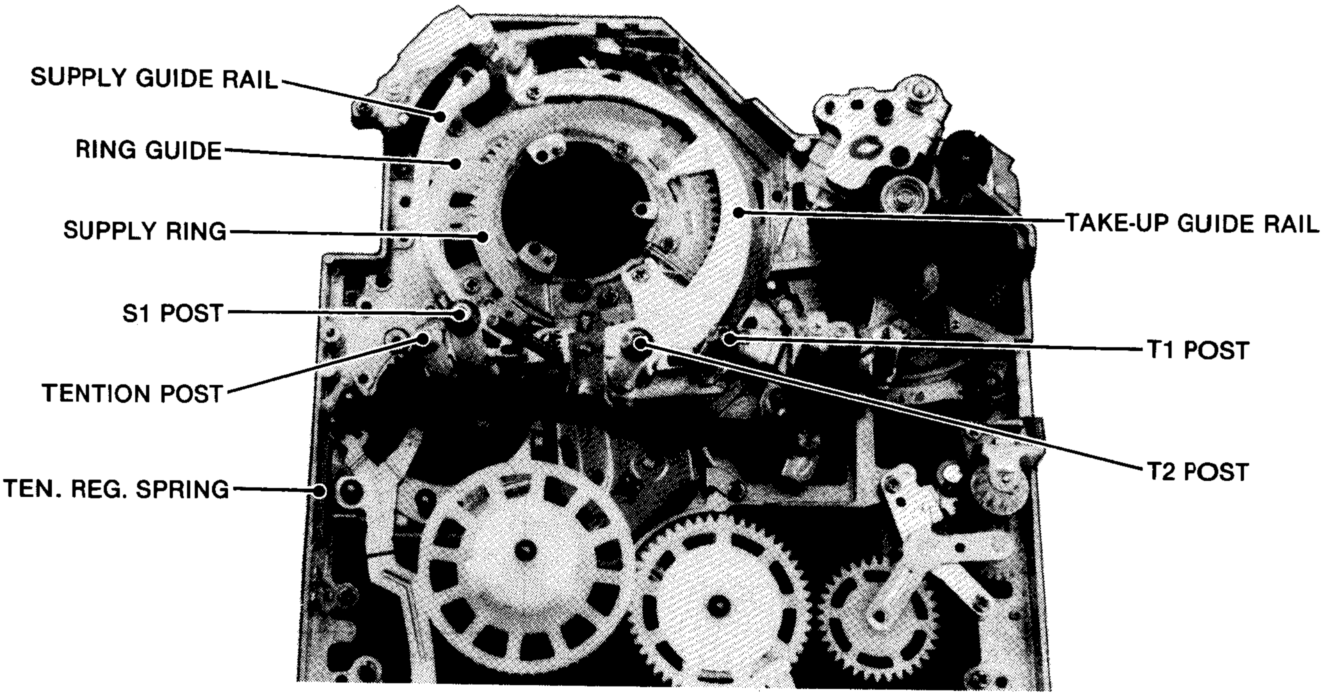

Envelope is adjusted properly
(No Lack of RF envelope)

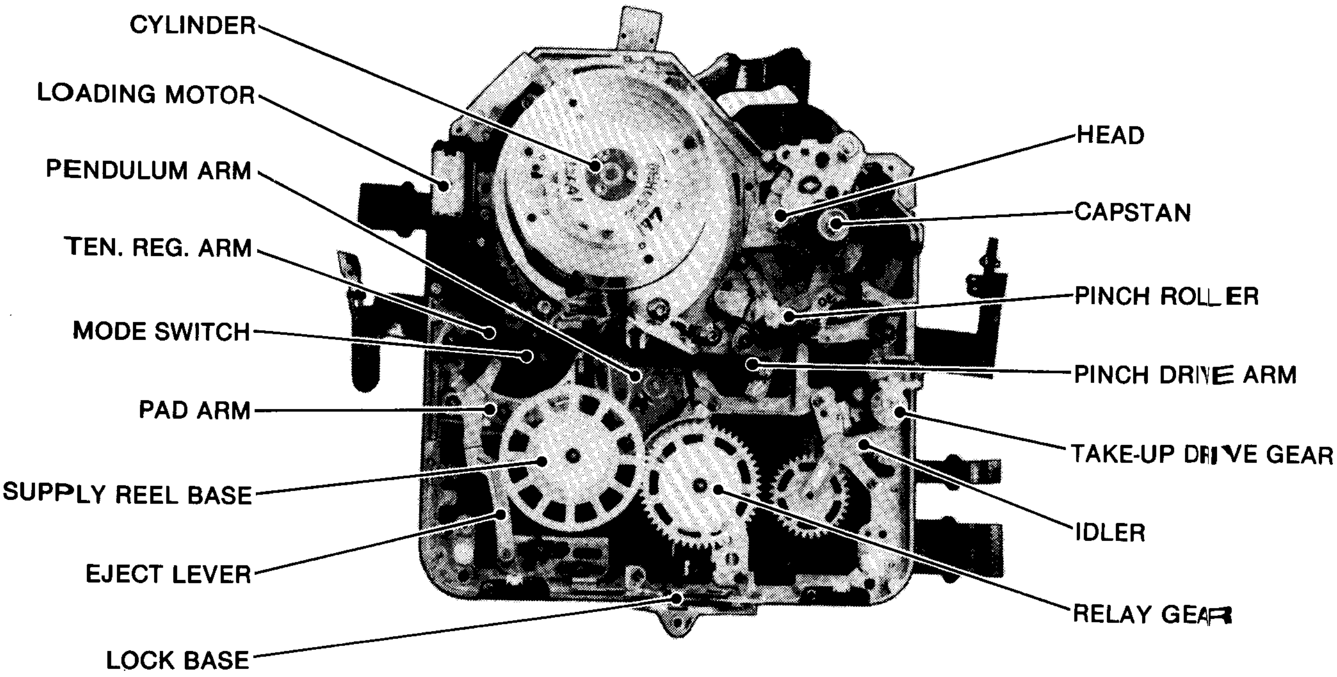
Fig. M39

☐1 Movement of Mechanism

1. Name of Mechanism


SUPPLY GUIDE RAIL
RING GUIDE
SUPPLY RING
S1 POST
TENTION POST
TEN. REG. SPRING
TAKE-UP GUIDE RAIL
T1 POST
T2 POST

*RING T is located underneath of RING GUIDE


CYLINDER
LOADING MOTOR
PENDULUM ARM
TEN. REG. ARM
MODE SWITCH
PAD ARM
SUPPLY REEL BASE
EJECT LEVER
LOCK BASE
HEAD
CAPSTAN
PINCH ROLLER
PINCH DRIVE ARM
TAKE-UP DRIVE GEAR
IDLER
RELAY GEAR

2. Movement to Mechanism

1. Loading operation

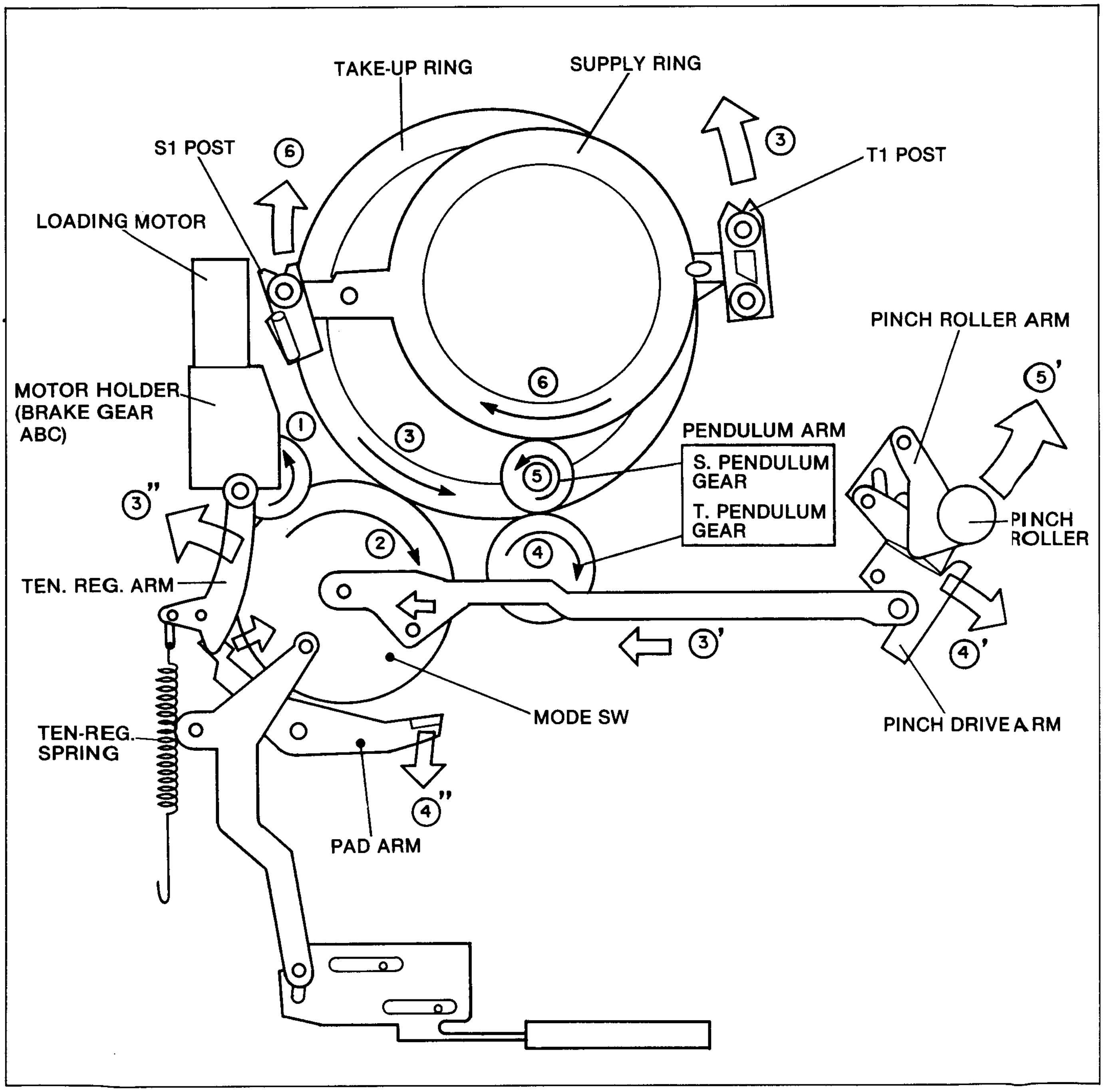

TAKE-UP RING
SUPPLY RING
S1 POST
⑥
③
T1 POST
LOADING MOTOR
PINCH ROLLER ARM
⑤'
MOTOR HOLDER (BRAKE GEAR ABC)
①
⑥
③
PENDULUM ARM
S. PENDULUM GEAR
T. PENDULUM GEAR
⑤
③"
②
④
PINCH ROLLER
TEN. REG. ARM
③'
④'
TEN-REG. SPRING
MODE SW
PINCH DRIVE ARM
④"
PAD ARM

Fig. 1 Loading Mechanism

- Motive power of loading motor is transferred by order of arrow mark.
  - Drive of loading post.
  - Heard Contact Pinchi Roller with capstan shaft. (Play Position)
  - Heard Contact Pad Arm with S. Reel table. (Play Position)

2. Eject operation

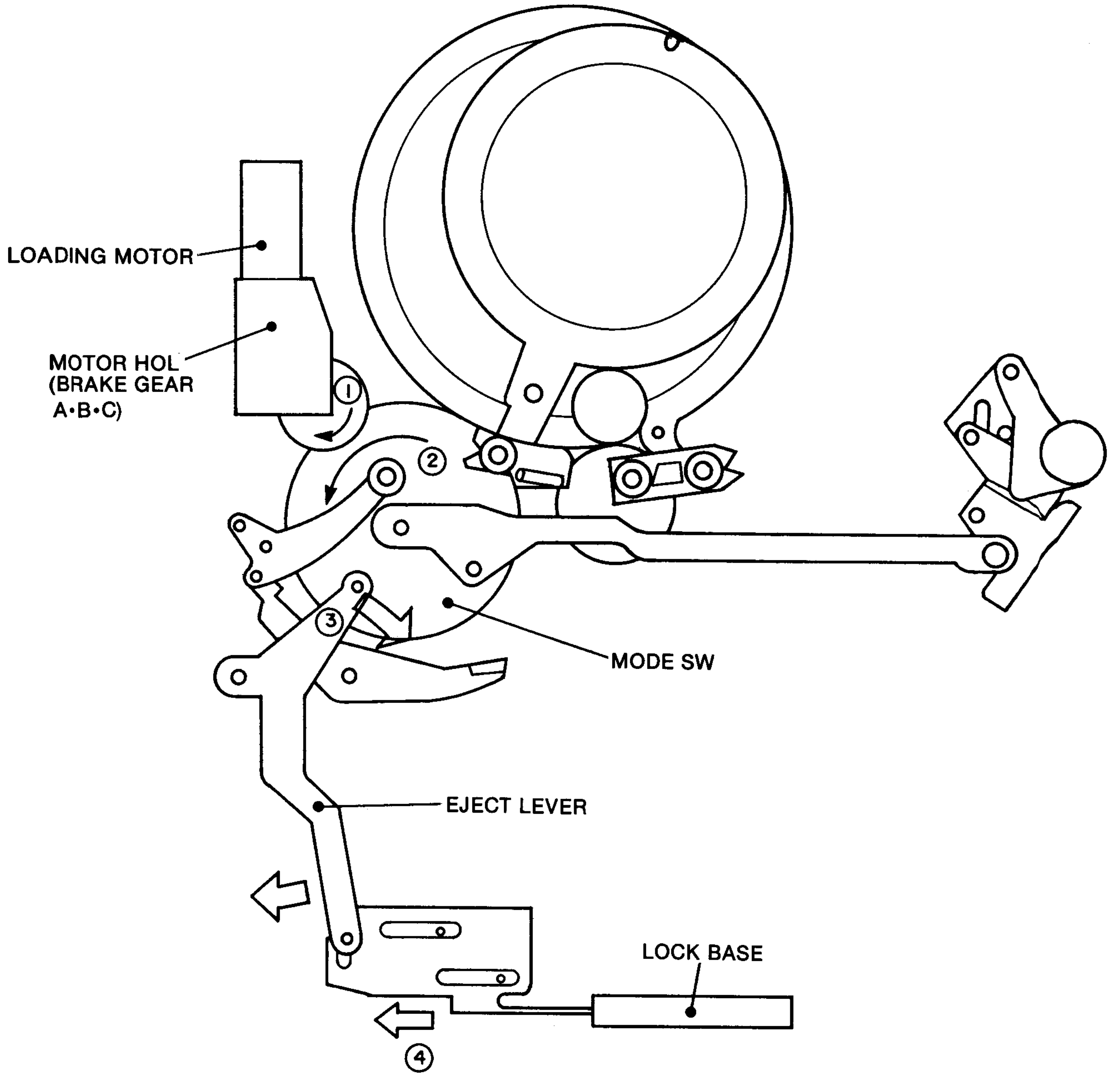

LOADING MOTOR
MOTOR HOL
(BRAKE GEAR
A•B•C)
①
②
③
MODE SW
EJECT LEVER
LOCK BASE
④

Fig. 2 Loading mechanism

- Motive power of loading motor is transferred by numerical order.
  After cassette up operation, those gears are moved to opposite of arrow's direction, to turn back stop1 condition.

3. Movement of Reel table

1. FF operation

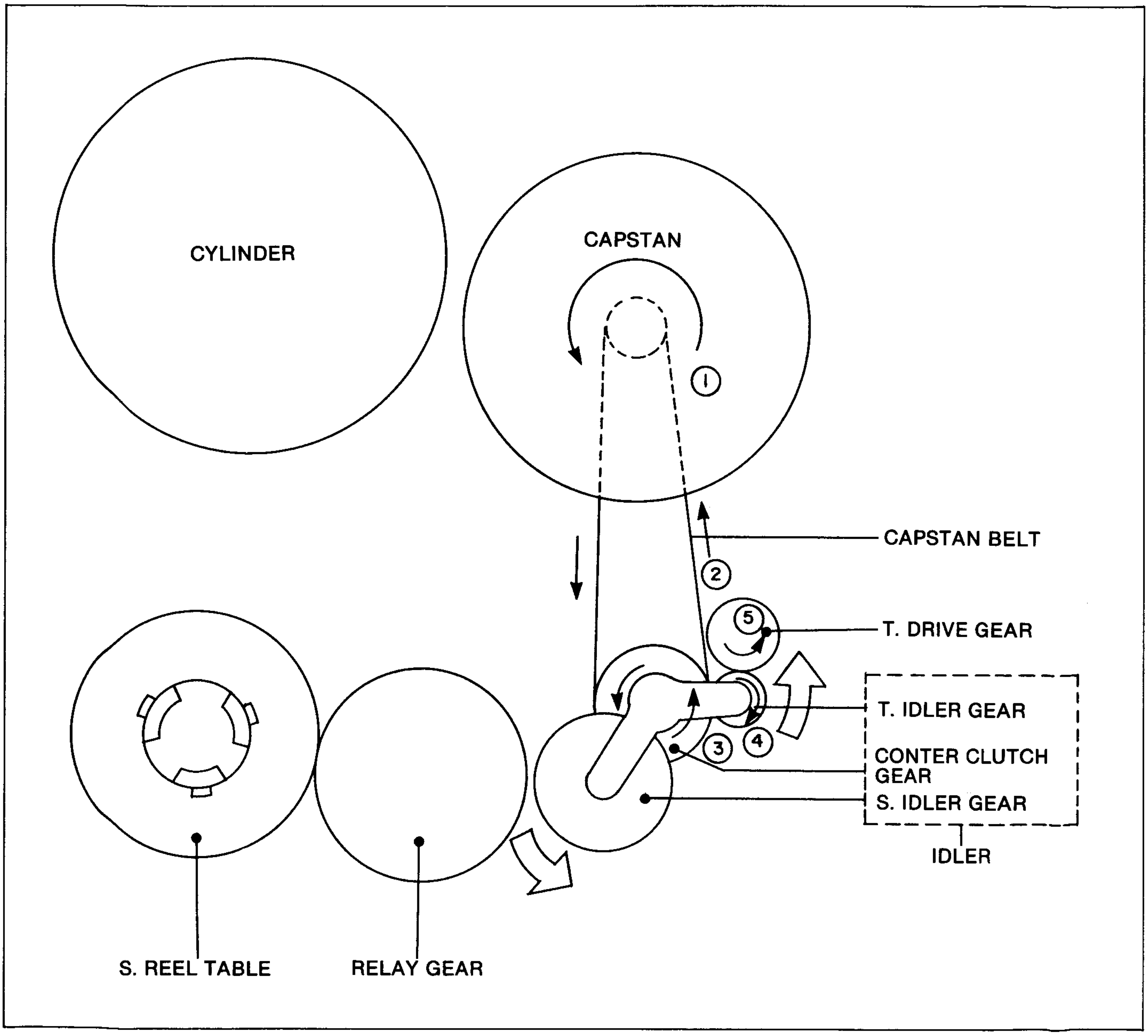

CYLINDER
CAPSTAN
①
CAPSTAN BELT
②
⑤
T. DRIVE GEAR
T. IDLER GEAR
③
④
CONTER CLUTCH GEAR
S. IDLER GEAR
IDLER
S. REEL TABLE
RELAY GEAR

Fig. 3 Take-Up side of Reel Drive

- Motive Power of Capstan motor is transferred to Idler (Center clutch Gear) through the capstan belt.
  At this time, position of Idler is decided by rotation of capstan motor.
  After that, Motive power is transferred by numerical order.
  Finaly, Take-up Reel is rotated by T. Drive Gear.
- Pad Arm is moved by Ten. Reg. Arm, and then contact with lower side of S. Reel table in order to apply back tension to tape.

2. REW operation

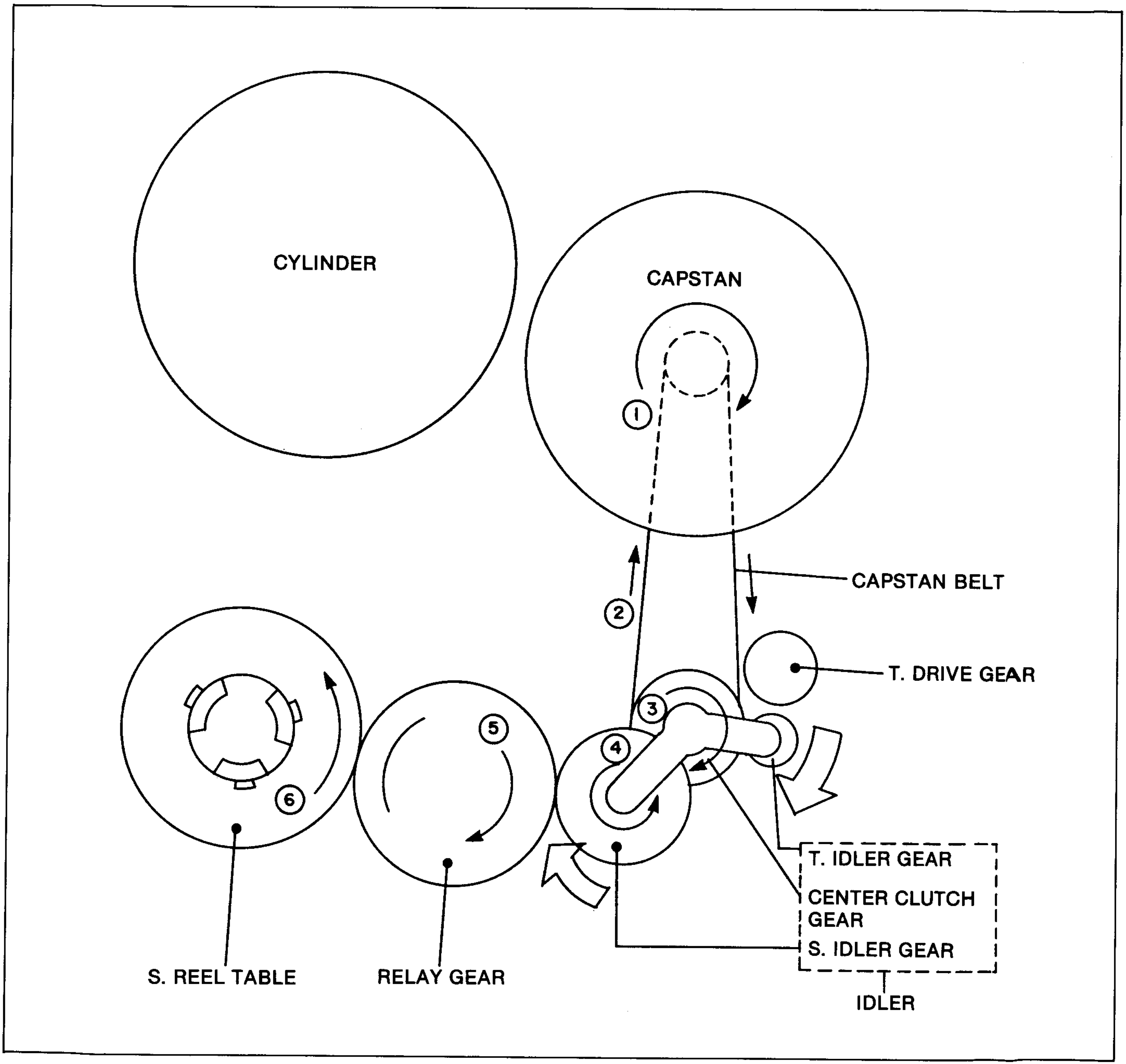

CYLINDER
CAPSTAN
①
CAPSTAN BELT
②
T. DRIVE GEAR
③
④
⑤
⑥
T. IDLER GEAR
CENTER CLUTCH GEAR
S. IDLER GEAR
IDLER
S. REEL TABLE
RELAY GEAR

Fig. 4 Supply side of Reel drive

- Motive power is transmited in numerical order.
- At this time, Idler is contacted to Relay Gear by capstan rotation.
- Also, back tention generate by contact Drive Gear T with REW Torgue spring (Including the Idler unit).

2 Alignment of Mechanism

Following mechanichal phase condition is impotant for mechanichal alignment.

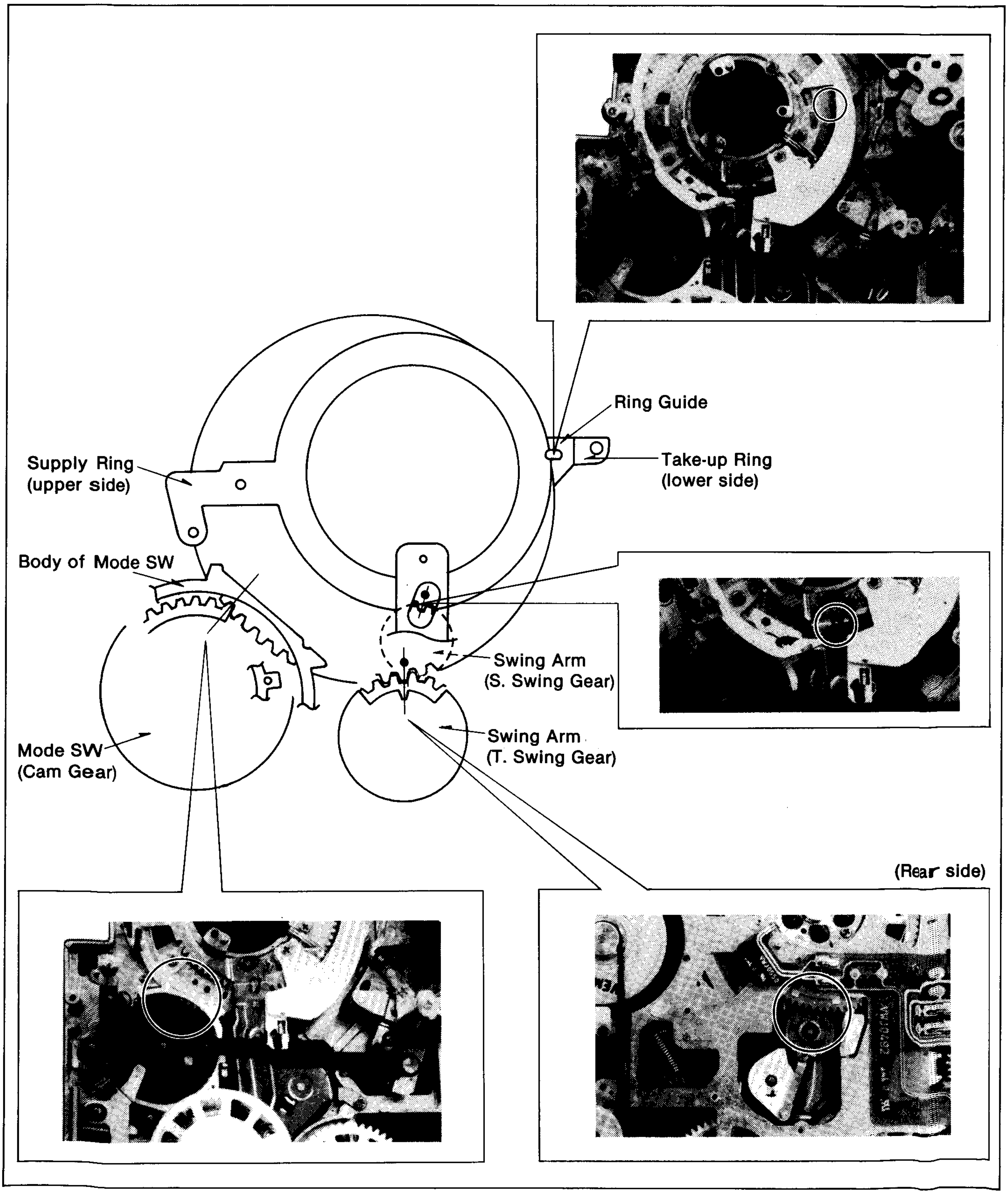

Ring Guide
Take-up Ring
(lower side)
Supply Ring
(upper side)
Body of Mode SW
Swing Arm
(S. Swing Gear)
Swing Arm
(T. Swing Gear)
Mode SW
(Cam Gear)
(Rear side)

Fig. 5 Mechanism Phase

2-5. ELECTRICAL ADJUSTMENT PROCEDURES

2-5-1. ELECTRICAL ADJUSTMENT FOR CAMERA SECTION

TEST EQUIPMENT AND TOOLS

The following equipment is required for adjustment of the CAMERA section.

1. Oscilloscope
   Dual Trace, 50MHz, 2mV/DIV
   10 : 1 Probe
   1 : 1 probe
2. Digital Volt Meter of VTVM
3. Frequency Counter
4. Vectorscope
5. Light Meter
6. Tripod
7. Colour Video Monitor
8. Lighting
   140 foot-candles (1400lux). on the chart surface 3200 degrees K.
9. Reflection Chart.
   * Logarithmic Gray Scale chart
     (Part No. : YWV2310RB99)
   * Colour Chip Chart
     (Part No. : YWV2100RB98)
   * Hunting Chart
     (Part No. : VFK0546)
   * White Chart (Card)
     (Part No. : VFK0546)
   * J Chart & Ball Chart
     (Part No. : VFK0580)
   * B/W Chart
     (Part No. : VFK0546)
   * Gray-White Chart
     (Part No. : VFK0546)
   * Colour Bar Chart
     (Part No. : VFK0677)
10. Plastic Tip Driver
11. E.V.R. FIXTURE (Part No. : VFK0644)
    * ROM 2 (Part No. : VFK0702ROM2)

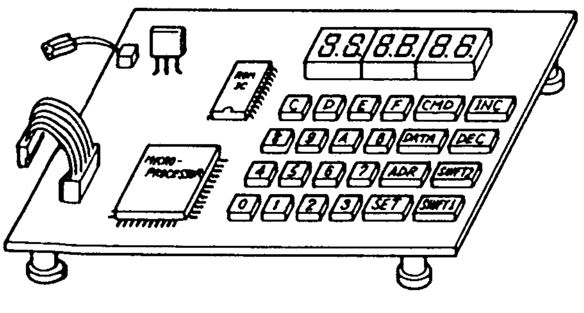
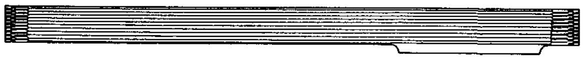


Fig. C1

12. Colour temperature Conversion filter
    * C12 Filter (Part No. VFK0374 or VFK0713)
    * C2 Filter (Part No. VFK0375 or VFK0716)
13. Extension Cables
    * FLAT Cable (18P) (Part No. VFK0725)
    * FLAT Cable (18P) (Part No. VFK0726)
    * Extention Cable (17P) (Part No. VFK0686)
    * EVR CONNECTION Cable (10P) (Part No. VFK0730)
    * CONNECTION Cable for Mesurement (14P) (Part No. VFK0733)
14. Camera Extension Cables

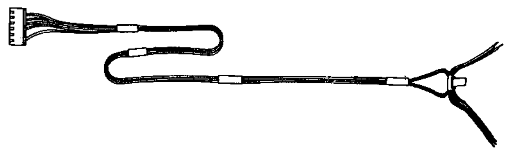
VFK0725 18 PIN FLAT CABLE

VFK0726 18 PIN FLAT CABLE



VFK0686 17 PIN EXTENSION CABLE

VFK0730 10 PIN EVR CONNECTION CABLE



VFK0733 14 PIN CONNECTION CABLE FOR MESUREMENT

Fig. C2

E.V.R. FIXTURE

Camera Process section employs the remarkable memory IC so called E.E.P.R.O.M (Electric Erasable Programmable Read Only Memory) that fulfills the role of variable resistor in conventional camera process.
In the conventional camera process, each adjustment points were used to be adjusted by turning variable resistor as shown in Fig. C3.
In case of NV–S5/S500 adjustment voltage is msemorized in EEPROM as 8 bit digital data.
EEPROM supplies the memorized adjustment voltage to the adjustment point as shown in Fig.C4.

The data in EEPROM can be electrically exchanged freely. E.V.R (Electric Variable Resistor) has been developed to exchange the 8 bit data of EEPROM in process circuit.
E.V.R can also communicate with RAM directly to change the each control voltage.
Normally EEPROM is having voltage data and is sent to RAM of Micro Computer where digital data is changed adjustment value.
Using E.V.R. you can change the data stored in EEPROM easily, in other words, you can adjust the camera process section. And E.V.R. can also send the date to RAM of Micro Computer directly for confirming the adjustment.

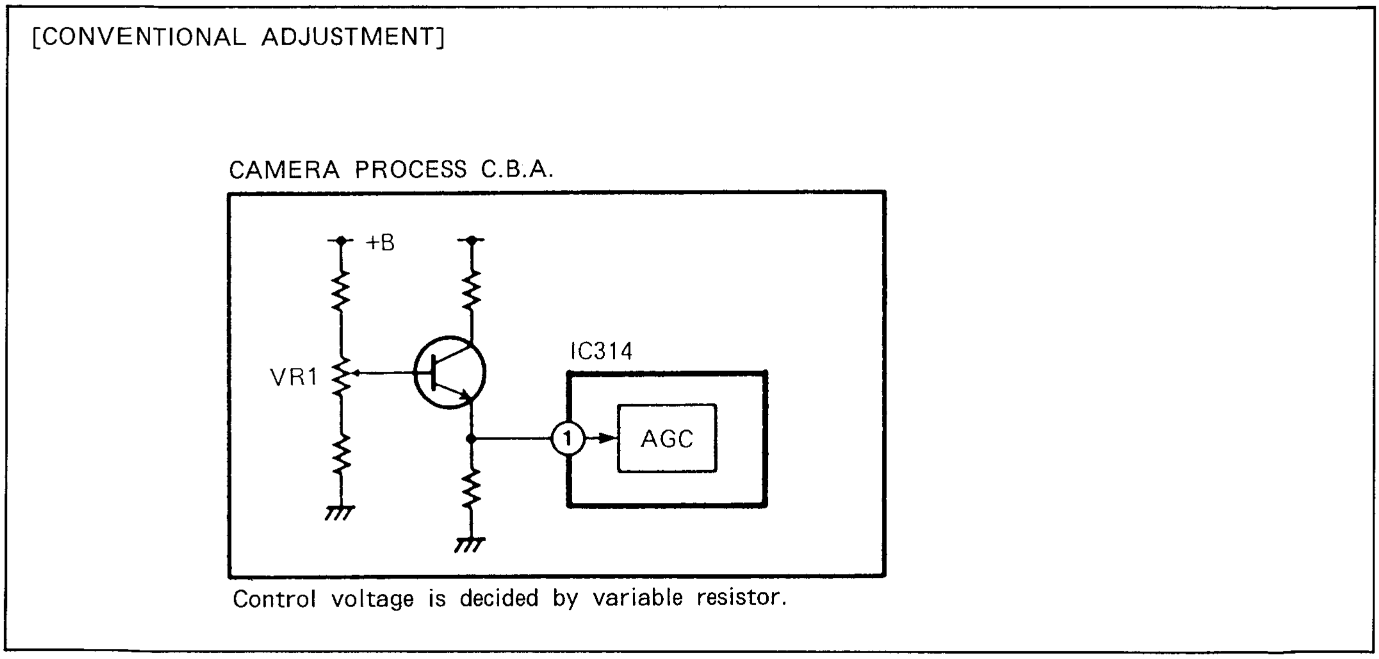

[CONVENTIONAL ADJUSTMENT]
CAMERA PROCESS C.B.A.
+B
VR1
IC314
1
AGC
Control voltage is decided by variable resistor.

Fig. C3

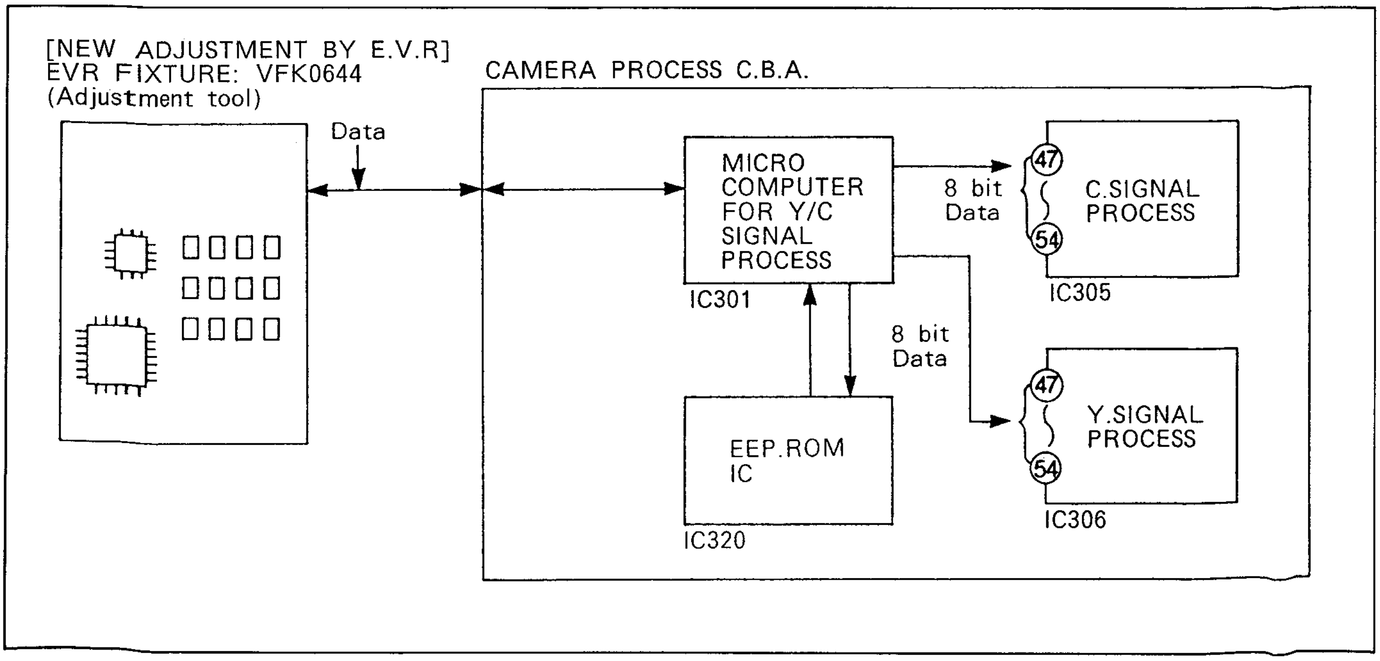
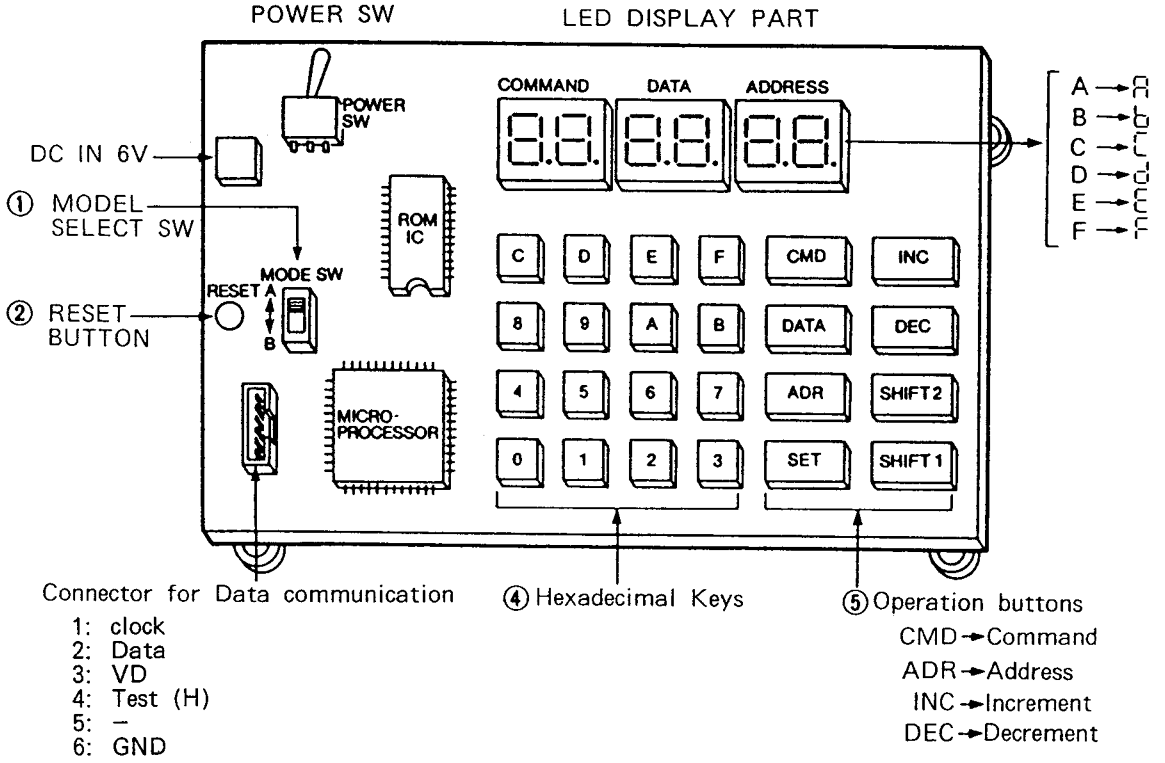

[NEW ADJUSTMENT BY E.V.R]
EVR FIXTURE: VFK0644
(Adjustment tool)
Data
CAMERA PROCESS C.B.A.
MICRO COMPUTER FOR Y/C SIGNAL PROCESS
IC301
8 bit Data
47
54
C.SIGNAL PROCESS
IC305
8 bit Data
EEP.ROM IC
IC320
47
54
Y.SIGNAL PROCESS
IC306

Fig. C4

Name of key


POWER SW
LED DISPLAY PART
POWER SW
COMMAND
DATA
ADDRESS
DC IN 6V
① MODEL SELECT SW
MODE SW
RESET
A
B
② RESET BUTTON
ROM IC
MICRO-PROCESSOR
C
D
E
F
CMD
INC
8
9
A
B
DATA
DEC
4
5
6
7
ADR
SHIFT2
0
1
2
3
SET
SHIFT1
A → A
B → b
C → C
D → d
E → E
F → F
Connector for Data communication
1: clock
2: Data
3: VD
4: Test (H)
5: –
6: GND
④ Hexadecimal Keys
⑤ Operation buttons
CMD → Command
ADR → Address
INC → Increment
DEC → Decrement

NO.	NAME	DESCRIPTION
①	MODE SW	MODEL selection switch. In case of NV–S5/S500, turn it to B side
②	RESET BUTTON	After Power is on, if operation is not stable, push this SW.
③	ROM IC	ROM IC of which Programing (to operate E.V.R) is memorized in. In the future, to cope with new camcorder servicing, this ROM IC could be replaced to new version.
④	HEXADECIMAL KEYS	Key buttons of 16 pieces (from "0" to "F"). These are used when "COMMAND", "DATA" or "ADDRESS" is set.
⑤	OPERATION BUTTONS	The buttons to operate writing, reading or setting the data.
	CMD: Command button	This is used to decide the which mode (command) between E.V.R and camcorder (for example, data writing or reading) to perform.
	DATA: Data button	For changing Data.
	ADR: Address button	To appoint the EEPROM address or RAM address.
	SET: Set button	To perform the appointed command (for example reading or writing).
	INC: Incliment DEC: Decliment	Increase or decrease the data one by one (+1, −1)
	SHIFT 1 button	To carry out macro operation (while pushing with hexadecimal keys) SHIFT 1 button is used. (Macro operations will be described later)
	SHIFT 2 button	To carry out macro operation(while pushing with hexadecimal keys) SHIFT 2 button is used (Macro operations will be described later.)

Fig. C5

PREPARATION

1) Remove both side case (R) and (L) referring disassembly method.
2) Connect the E.V.R. FIXTURE and measuring equipments as shown in Fig. C6.

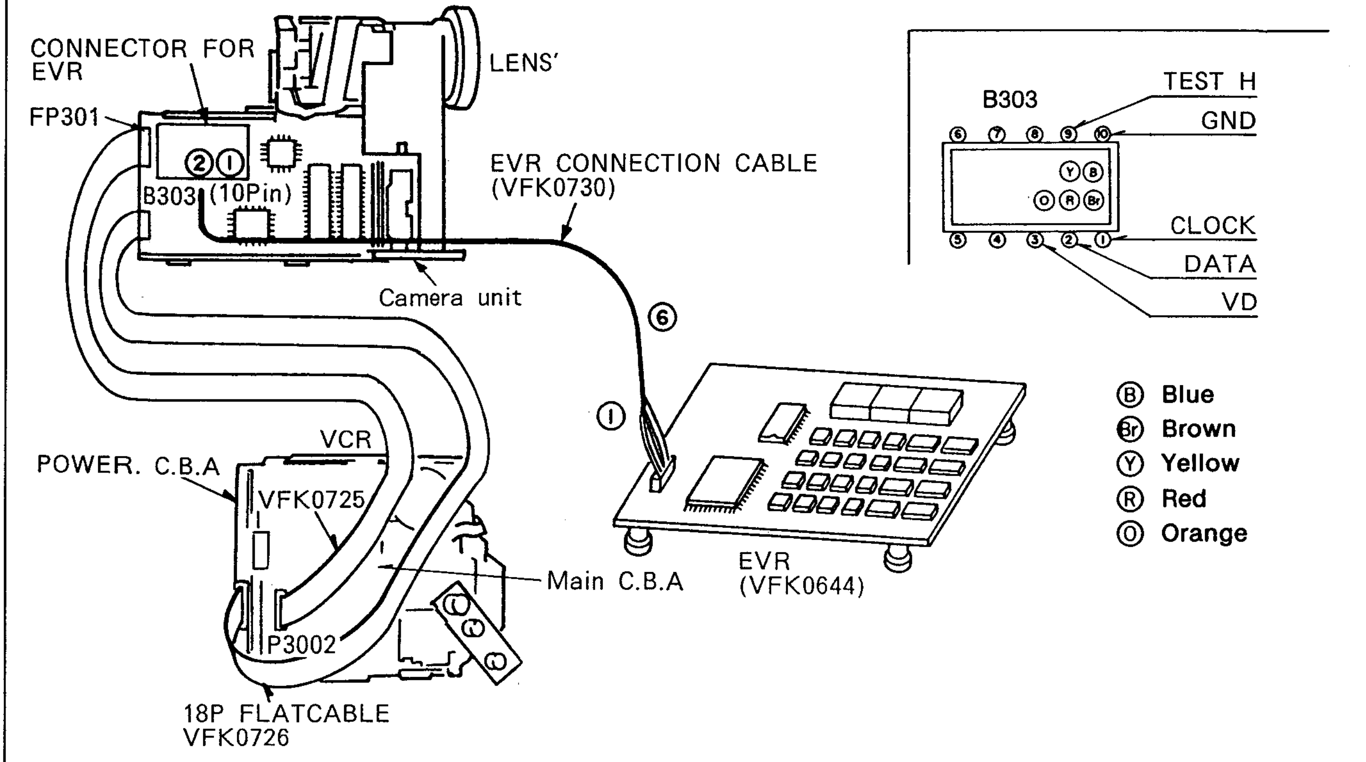

CONNECTOR FOR EVR
FP301
②①
B303 (10Pin)
LENS'
EVR CONNECTION CABLE (VFK0730)
Camera unit
⑥
①
POWER. C.B.A
VCR
VFK0725
Main C.B.A
P3002
18P FLATCABLE VFK0726
EVR (VFK0644)
B303
⑥ ⑦ ⑧ ⑨ ⑩
Ⓨ Ⓑ
Ⓞ Ⓡ Ⓑr
⑤ ④ ③ ② ①
TEST H
GND
CLOCK
DATA
VD
Ⓑ Blue
Ⓑr Brown
Ⓨ Yellow
Ⓡ Red
Ⓞ Orange

Fig. C6

1) Select the mode selector on E.V.R. Fixture to "B" side.
   (Refer to Fig. C5)
2) Turn the power SW of NV-S5/S500EN on.
3) Turn the power SW of E.V.R. fixture on Then LED Display on E.V.R. Fixture indicates If display does not indicate this, Push Reset button or confirm the connection cables between EVR and CAMERA.

(Before Adjusting How to use the E.V.R. Fixture)

1) How to Read out the Data which is being stored in EEPROM.
Connect the E.V.R. Fixture as shown in Fig. C6.

Result:
Adjustment value of AGC has been set for "6A".
It is convenient to read out the data like this (and take memo) before writing the new data next time)
even if something mistake is happened when writing the new data, you can rewrite original data.

Item		Proceduring Order	Buttons to be Pushed	LED Indication
For Example, Reading out the data of AGC Adjustment comunication from camcorder to E.V.R. EEPROM→ E.V.R.	1	Set the Command mode to "14", "14" is read out command. (Refer to command description)	CMD 1 4	LED lights up 14/80 00 Command setting
	2	Set the Address of EEPROM	ADR 6 A	14 80 6A. Address setting of EEPROM LED lights up
	3	Read out the data	SET Push this for 2 seconds	14 09.6A data for AGC for example LED lights up

Fig. C7

2) Writing the New Data

(1) Search and Write Procedure
(For example:CDS GAIN Adjustment).

confirmation:
Confirm whether data is written correctly or not.

Item		Proceduring Order	Buttons to be Pushed	LED Indication
For Example, writing the CDS GAIN adjustment data. E.V.R.→ EEROM	1	Set the command to "18".	CMD 1 8	Command for search mode.
	2	Set the Address of RAM to "9C" E.V.R.→ RAM (communication from E.V.R. to RAM)	ADR 9 C	LED lights up. 18/80 9C
	3	Adjustment Push "DEC" or "INC" button so that CDS GAIN at B203-3 becomes 300mV+-10mV	Search with INC or DEC	18 9 19C. LED lights up
	4	Change the command to "02"	CMD 0 2	LED lights up 02/9 19C Command for Direct Writing

Fig. C8-1

Item	Proceduring Order		Buttons to be Pushed	LED Indication
	5	Set the address of EEPROM to "4F"	ADR 4 F	address of EEPROM 02 91 4F LED lights up
	6	Do not change the data after adjustment	DATA 9 1	02 91 4F LED lights up
	7	Write the data	SET Push this for 2sec.	LED disappear 02 91 4F

Fig. C8-2

3) Direct Writing Procedure

Item	Proceduring Order		Buttons to be Pushed	LED Indication
For Example, writing the CDS GAIN adjustment data	1 2 3	**Searching the best Point.** **same as (1)**	same as (2)	same as (2)
	4	**Change the command to "02"**	CMD 0 2	LED lights up 02 00 21 Command for Direct writing
	5	Set the address of EEPROM to "4F"	ADR 4 F	address of EEPROM 02 00 4F LED lights up
	6	Set the data of best point "91"	DATA 9 1	02 91 4F LED lights up
	7	**Write the data**	SET Push this for 2sec.	LED disappear. 02 91 4F

Fig. C9

(Description of Command)

Selecting the communication for what kind of data exchange is performed between EVR Fixture and camdorder.

Command	Communication	Contents
02	EVR Fixture → EEPROM	Writing the data to address of EEPROM..(Lower Digit)
12	EVR Fixture → EEPROM	Writing the data to address of EEPROM. (Upper Digit)
04	EEPROM → EVR Fixture	Reading out the data of EEPROM. (Lower Digit)
14	EEPROM → EVR Fixture	Reading out the data of EEPROM. (Upper Digit)
08	EVR Fixture → Micro Computer (RAM)	Data transmission of EVR Fixture to Micro computer (RAM).
18	EVR Fixture → Micro computer (RAM)	Data tranmission of EVR Fixture to Micro computer (RAM).
09	Micro computer (RAM) → EVR Fixture	Reading out the data of Micro computer (RAM).
19	Micro computer (RAM) → EVR Fixture	Reading out the data of Micro computer (RAM).

Fig. C10

(Error Indication)

If something error is happening while EVR is working, EVR indicates the error massage which are mentioned in Fig. C11 for 2 seconds and then return to previous indication.

Error NO.	Contents of Error
1	Set the wrong command number
2	Set the wrong Address number
3	VD signal from camera is not coming.
4~6	Detect the error during communication
7	Writing error in the EEPROM of camera.
8	Communication error in the EEPROM of camera

Fig. C11

(Macro Operation)
The following operation are provided to tranfer
the data by one touch.

<table>
<tr><th>NO.</th><th>Buttons to be pushed
/Push these together</th><th>Operation</th></tr>
<tr><td>1</td><td>SHIFT 1 + 0</td><td>Making IRIS fully open.</td></tr>
<tr><td>2</td><td>SHIFT 1 + 1</td><td>Making IRIS fully close.</td></tr>
<tr><td>3</td><td>SHIFT 1 + 2</td><td>Making AGC Gain minimize.</td></tr>
<tr><td>4</td><td>SHIFT 1 + 3</td><td>Making AGC Gain maximize</td></tr>
<tr><td>5</td><td>SHIFT 1 + 4</td><td>Fade on.</td></tr>
<tr><td>6</td><td>SHIFT 1 + 5</td><td>Fade off.</td></tr>
<tr><td>7</td><td>SHIFT 1 + 6</td><td>Change the Hi-Speed Shutter mode.
(Press the SHIFT 1 + 6 repeatedly to select the desired shutter speed.,EVR indicate the mode NBR of Hi-Speed Shutter at the address digits a moment,detail as follows.)
<table>
<tr><th>LED INDICATION</th><th>MODE</th><th>LED INDICATION</th><th>MODE</th></tr>
<tr><td>0</td><td>Normal mode.</td><td>4</td><td>1/1000 mode</td></tr>
<tr><td>1</td><td>1/100 mode</td><td>5</td><td>1/2000 mode</td></tr>
<tr><td>2</td><td>1/250mode</td><td>6</td><td>1/4000 mode</td></tr>
<tr><td>3</td><td>1/500mode</td><td></td><td></td></tr>
</table></td></tr>
<tr><td>8</td><td>SHIFT 1 + 7</td><td>Switcing the Auto/manual Focus.
(Press the SHIFT 1+ 6 repeatedly to select the desired focus mode, EVR indicate the mode of Focus at the address digits a moment,detail as follows.)
<table>
<tr><th>LED INDICATION</th><th>MODE</th></tr>
<tr><td>0</td><td>Manual Focus mode.</td></tr>
<tr><td>1</td><td>Auto Focus mode..</td></tr>
</table></td></tr>
<tr><td>9</td><td>SHIFT 1 + 8</td><td>White set</td></tr>
<tr><td>10</td><td>SHIFT 1 + 9</td><td>Making Iris manual condition.</td></tr>
<tr><td>11</td><td>SHIFT 1 + A</td><td>Making ALC manual condition.</td></tr>
<tr><td>12</td><td>SHIFT 2 + 2</td><td>Writing the Average data and Fixed data to EEPROM.</td></tr>
<tr><td>13</td><td>SHIFT 2 + 3</td><td>Automatic Calculating the Colour Reproduction</td></tr>
<tr><td>14</td><td>SHIFT 2 + 4</td><td>Automatic Calculating for Auto White Balance.</td></tr>
</table>

NOTE 1: How to reset for AGC minimum condition.

* Push "CMD","0","8".
* Push "ADR","7","9".
* Push "DATA",1","0".
* Push "SET" key.

NOTE 2: How to reset for AGC maxium condition.

Push SHIFT 1 + 2,and then follow the procedures of NOTE 1.

Fig. C12

(Adjustment Items reguired after replacing the individual compornents.)

When following parts are replaced, check the following adjustment Items and adjust these if necessary.

NO.	Replaced Parts	Adjustment point or check points which are required			
		ALL ADJ. Points	Colour Reproduction	Focus & Zoom Encoder	Other ADJ.
1	IC320 (EEPROM)	○			
2	CCD Unit Individual		○	○	
3	Process C.B.A	○			
4	Sensor AF C.B.A	△	○	○	
5	Lens Unit			○	Hole Amp
6	Focus Encoder C.B.A			○	
7	IC301				
8	IC204				CDS Gain
9	IC501				AGC Gain, ALC Gain A/D input level
10	IC309				Y Level
11	IC702				Hole Amp
12	other				

○ mark ....Adjustment may be required.
△ mark ....Confirm adjustment necessity and adjust it, if necessary.
Colour Reproduction ....WB, Colour gain, colour phase adjustments.

Fig. C13

(Standard Setting for Camera Adjustment)

Unless specified, switches are set to following positions.

1) White Balance Switch ... White set
   (Refer to How to White Set)
   AF ... Auto
   High speed shutter ... OFF
   Fade ... OFF
   EIS: OFF
2) Iris ... Center(ALC condition)
3) Use 3200 dergrees kelvin light source for lighting.
4) For trigger the oscilloscope, use Video output.
5) Service work for camera unit must be performed in a dust free location to maintain the lens cleanliness.

(How to White Set)
1) Aim the camera at white chart.
2) Push SHIFT1+8 together.

(Hexadecimal–Decimal Conversion Table)

For some of adjustment Items, calculation of hexadecimal data (indicated on LED of EVR Fixture) is needed to obtain the adjustment data.
In these cases, convert the hexadecimal value to decimal value before calcuaation and after calculation is finished, reconvert the result to hexadecimal to obtain the adjustment data. Thus, write the adjustment data into EEPROM.
A hexadecimal – Decimal conversion table is shown in Fig. C13.

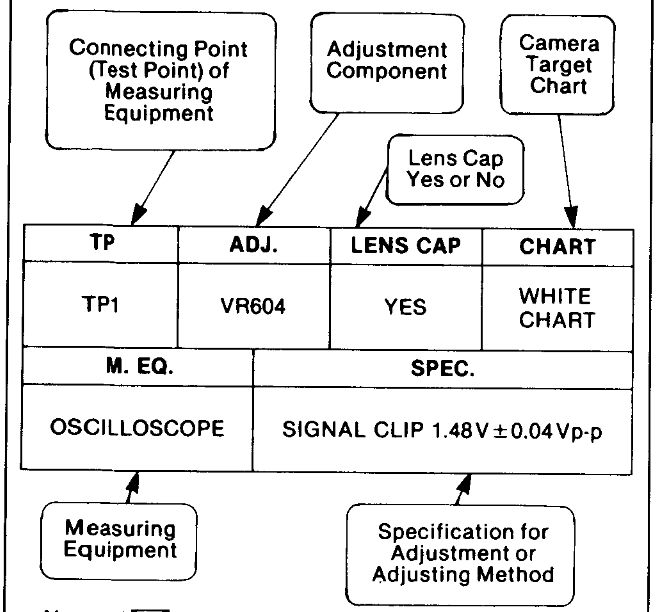
②

Hexadecimal lower digit / Hexadecimal upper digic	0	1	2	3	4	5	6	7	8	9	A	b	C	d	E	F
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
① ← A	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
b	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
d	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

For example: If indication of EVR is "A8" (as upper digit is "A" and lower digit is "8"), a decimal value of "168" is obtained from the intersection of ① and ② in the above table.

Fig. C14 Hexadecimal–Decimal Conversion Table

HOW TO READ THE ADJUSTMENT PROCEDURES (FOR USE OF CONVENTIONAL VR)

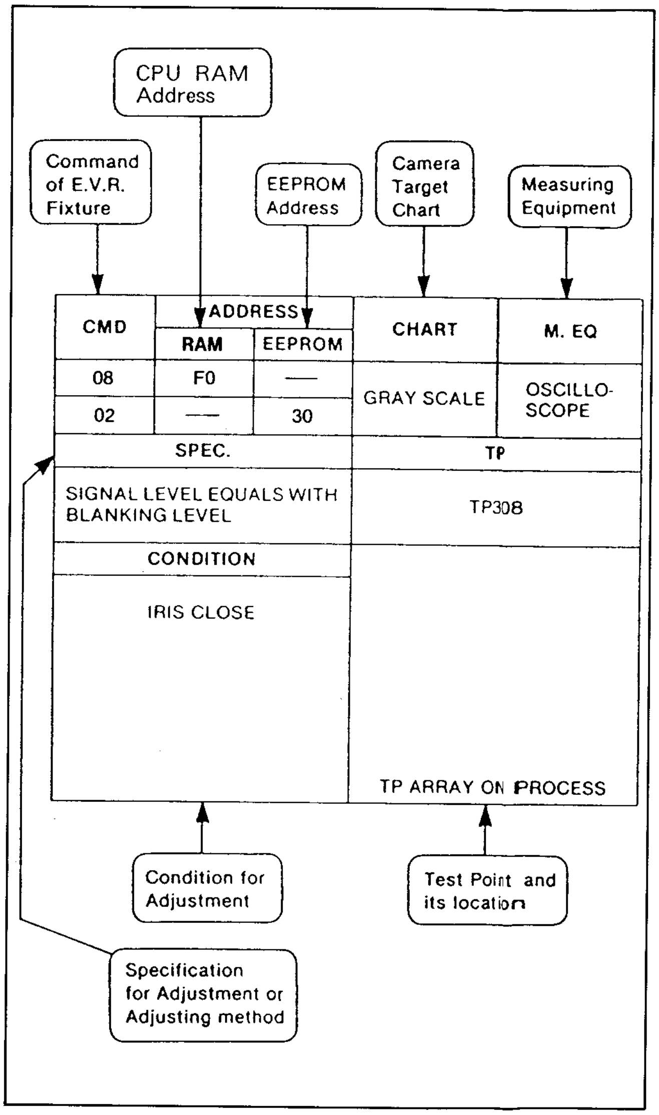


Connecting Point (Test Point) of Measuring Equipment
Adjustment Component
Camera Target Chart
Lens Cap Yes or No
TP
ADJ.
LENS CAP
CHART
TP1
VR604
YES
WHITE CHART
M. EQ.
SPEC.
OSCILLOSCOPE
SIGNAL CLIP 1.48V±0.04Vp-p
Measuring Equipment
Specification for Adjustment or Adjusting Method

Note: If ☒ appears in any block, this means it is not used or not important.

Fig. C15

HOW TO READ THE ADJUSTMENT PROCEDURES (FOR USE OF E.V.R.)



CPU RAM Address
Command of E.V.R. Fixture
EEPROM Address
Camera Target Chart
Measuring Equipment
CMD
ADDRESS
RAM
EEPROM
CHART
M. EQ
08
F0
—
02
—
30
GRAY SCALE
OSCILLO-SCOPE
SPEC.
TP
SIGNAL LEVEL EQUALS WITH BLANKING LEVEL
TP308
CONDITION
IRIS CLOSE
TP ARRAY ON PROCESS
Condition for Adjustment
Test Point and its location
Specification for Adjustment or Adjusting method

Fig. C15-1

1. DATA WRITING FOR FIXED VALUE

1-1. When EEPROM is replaced, All item needs Re-Adjustment.

But some Item has Fixed Value that out of relation to EEPROM and Process IC. Therepore If EEPROM replaced, some Item must be write its data to EEPROM directly. Write the following data to EEPROM directly.

Note:
Direct Data writing of all Fixed Value is must be done before adjust the camera unit.

1-2. Example 2. (Automatic Writing)

If VFK0701ROM2 (New ROM) is installed to the EVR Fixture (VFK0644), when the pushing SHIFT 2 and "2" key together, Average Data data is written in to EEPROM Automatically.

LOWER		UPPER						
		0	1	2	3	4	5	6
0	H DIGIT	B-Y GC 6000 33	B-Y MAT 6000 68	B-Y WB 6000 4C	B-Y limit 6000 3D	B-hilimit 6000 53	BACKUP 1	vap-cl FF
	L DIGIT	R-Y GC 6000 5E	R-Y MAT 6000 35	R-Y WB 6000 3F	R-Y limit 6000 33	R-hilimit 6000 47	BACKUP 2	vap-co 23
1	H DIGIT	B-Y GC 5100 33	B-Y MAT 5100 68	B-Y WB 5100 55	B-Y limit 5100 4D	B-hilimit 5100 66	BACKUP 3	Hap-co 22
	L DIGIT	R-Y GC 5100 5E	R-Y MAT 5100 35	R-Y WB 5100 45	R-Y limit 5100 3D	R-hilimit 5100 54	BACKUP 4	hi-1. ap 10
2	H DIGIT	B-Y GC 4500 33	B-Y MAT 4500 68	B-Y WB 4500 65	B-Y limit 4500 60	B-hilimit 4500 75	BACKUP 5	cnt2-up 06
	L DIGIT	R-Y GC 4500 5E	R-Y MAT 4500 35	R-Y WB 4500 4A	R-Y limit 4500 3D	R-hilimit 4500 59	BACKUP 6	cnt2-dn B0
3	H DIGIT	B-Y GC 3600 44	B-Y MAT 3600 68	B-Y WB 3600 76	B-Y limit 3600 6A	B-hilimit 3600 83	BACKUP 7	H+vap A5
	L DIGIT	R-Y GC 3600 5D	R-Y MAT 3600 35	R-Y WB 3600 5E	R-Y limit 3600 52	R-hilimit 3600 64	BACKUP 8	ElSap C5
4	H DIGIT	B-Y GC 3300 50	B-Y MAT 3300 6C	B-Y WB 3300 78	C-FLAG TH 77	CSPDm 38	EIS MODE	c-g-ap 20
	L DIGIT	R-Y GC 3300 5B	R-Y MAT 3300 3B	R-Y WB 3300 65	CHSPD 30	CSPDs 40		c-g-sw C3
5	H DIGIT	B-Y GC 3100 5D	B-Y MAT 3100 6C	B-Y WB 3100 7B	B-limit 3100 6F	B-hilimit 3100 81	ped-h 00	H-st/p 19
	L DIGIT	R-Y GC 3100 5A	R-Y MAT 3100 3B	R-Y WB 3100 6C	R-limit 3100 62	R-hilimit 3100 73	ped-l 00	H-cd/p 00
6	H DIGIT	B-Y GC 2800 5D	B-Y MAT 2800 6C	B-Y WB 2800 7C	B-limit 2800 7B	B-hilimit 2800 59	ped-st 50	V-st/b 50
	L DIGIT	R-Y GC 2800 5B	R-Y MAT 2800 3B	R-Y WB 2800 71	R-limit 2800 73	R-hilimit 2800 8C	ped-end 90	V-cd/p D5
7	H DIGIT			Bwb Llimit 4C	B-limit SKY 37	B-hilimit SKY 3D	flag 00	H-st/b 0C
	L DIGIT			Rwb Llimit 3F	R-limit SKY 32	R-hilimit SKY 44	flag3 FC	sw 7E
8	H DIGIT			Bwb Hlimit FF	B-limit TREE 75	B-hilimit TREE 83	flag7	Y-base AC
	L DIGIT			Rwb Hlimit FF	R-limit TREE 32	R-hilimit TREE 52	flag8 00	Vap-co 25
9	H DIGIT	Ver det1 00	halogen F 17	B-Y WB 4900 5E	BWBZ B 00	BWBZ C 00	Tree BK 03	cntlap 24
	L DIGIT	Ver det2 00	EIS LOTH 4A	R-Y WB 4900 4A	RWBZ B 81	RWBZ C 00	fadetime FF	glap F8
A	H DIGIT	faderef 80	flth 20		tg blc2 28	fd tim1 17	st-alcp 05	DAagc
	L DIGIT	fadeflg 8C	flthz 60	tg blc1 36	tg blc3 2F	fd tim2 6E	st-alcn 05	cntc 8F
B	H DIGIT	B in 06	fade off set 09	TH 1 54	TH 3 8F	PALBR 00	sw set 81	Ychk h A0
	L DIGIT	R in 06	ab set 09	TH 2 11	TH 4 0A	LOOPTH 02	tmp1 AA	Ychk l 28
C	H DIGIT	Outb1 9F	ina1 F3	m1 6E	m1 blc1 average 84	m1 blc2 average 9A	m1 blc3 average B0	Ycpv l 92
	L DIGIT	Outb2 7B	ina2 E6	m2 A1	m2 blc1 peak B9	m2 blc2 peak D1	m2 blc3 peak E9	darklv l 00
D	H DIGIT	Outb3 5C	ina3 CD	a1 AA	a1 blc1 average AA	a2 blc2 average AA	a1 blc3 average AA	flioff 10
	L DIGIT	Outb4 4F	ina4 B3	a2 66	a1 blc1 peak 66	a2 blc2 peak 66	a1 blc3 peak 66	hl gain 88
E	H DIGIT	Outb0 0A	close 00	gain set 88	keisha 04	ag cnt1 34	ag cnt2 FF	p hold FF
	L DIGIT	T-gain 43	open 00	iris set 00	swcnd 00	f cnd 00	mix 03	p hold FF
F	H DIGIT	DAC 1 low clip 77	DAC 3 ZOOM(+) F0	DAC 5 R-bias 8C	DAC 9 V-pede B 5D	DAC A PWM 9A	core 03	clpmax 08
	L DIGIT	DAC 2 Y-clip C3	DAC 4 ZOOM(−) 26	DAC 8 V-pede R 66	DAC-C AA	DAC B CDS G 83	AGClim A0	timecmp C0

Fig. C16 Address map of all Average data for NV−S5/S500 PAL

1. VTR CARRIE RBALANCE ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ
	RAM	EEPROM		
18	R:8F B:9A	—		VECTOR-SCOPE
02,12	—	R-Y:2F(L) B-Y:3F(H)		
SPEC.			TP	
CENTRE OF ECTORSCOPE			VIDEO OUT	

Purpose:
Set chroma signal black and white level.

Symptom of Misadjustment:
With a large shift, color is added to Black and white areas in the picture.

Note:
Refer to preparation for connection of EVR.

1. Connect the vectorscope to video out.
2. Place the unit to "IRIS CLOSE" by pushing "SHIFT 1" and "1" keys together.
3. Push "CMD", "1" and "8" keys.
4. Push "ADR", "8" and "F" keys.
5. Push "INC" or "DEC" so that vector comes to centre as shown in Fig. C17.
6. Push "CMD", "0" and "2" keys.
7. Push "ADR", "2" and "F" keys.
8. Push "SET" key to write its adjusted data in EEPROM.
9. Change "CMD" to "18" and "ADR" to "9A".
10. Push "INC" or "DEC" so that vector comes to centre as shown in Fig. C17.
11. Push "CMD", "1" and "2" keys.
12. Push "ADR", "3" and "F" keys.
13. Push "SET" key.

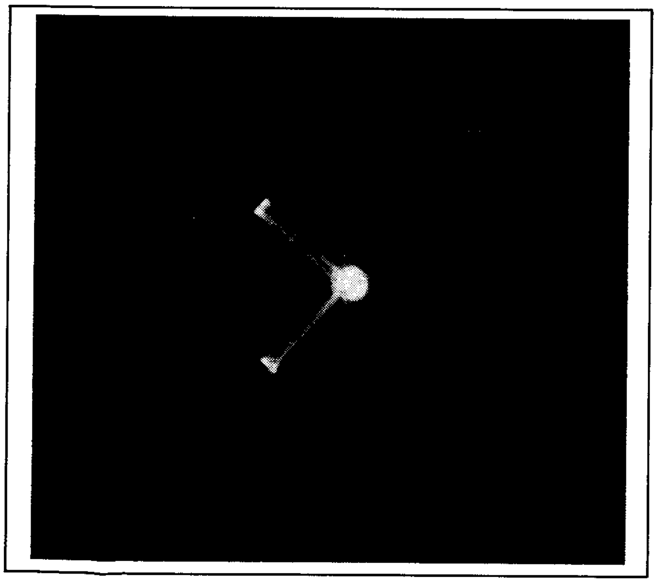


Fig. C17

2. R-Y AND B-Y PEDESTAL ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR8011(R) VR8012(B)	STOP	
TAPE	M. EQ.	SPEC.	
	OSCILLO-SCOPE OR VECTOR-SCOPE	VECTOR COMES CENTER	

1. Connec the Video output to vectorscope (or oscilloscope)
2. Place the to "FADE" by pushing SHIFT 1 + 4.
3. Adjust the VR8011, VR8012 so that wavefrom become minimized as shown Fig. C18 or so that vector comes centre as shownin Fig. C19.

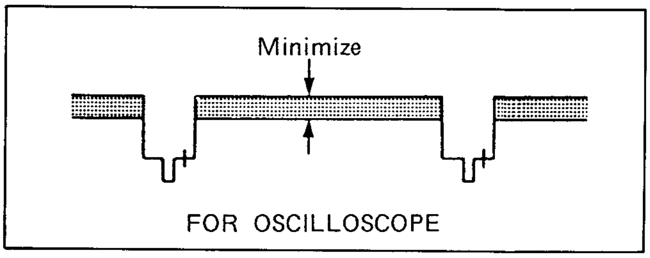


Fig. C18

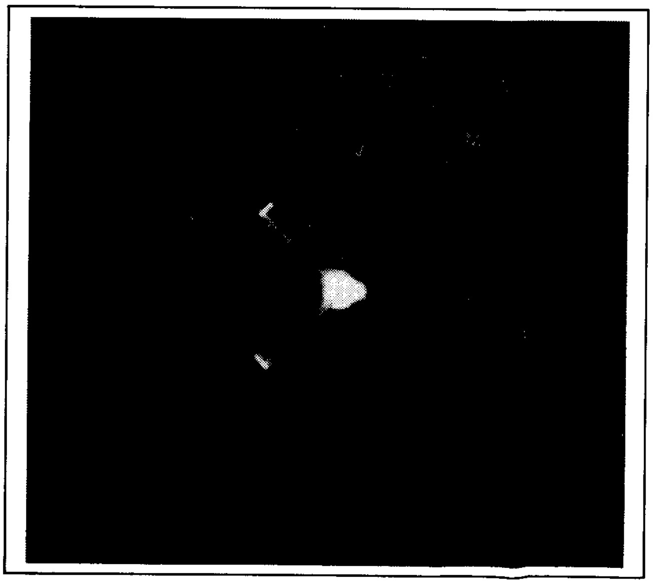


Fig. C19

3. PLL FREQUENCY ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TL209	C220		
M. EQ.		**SPEC.**	
FREQUENCY COUNTER		9.656250MHz+-50Hz	

Purpose: CCD Drive pulse adjustment
Symptom of Misadjustment: Picture sync misoperation.

4. FCK PLL VOLTAGE ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TL210	C120		
M. EQ.		**SPEC.**	
D.V.M.		1.5+-0.1V	

Purpose: TO adjust the title Sync.
Symptom of Misadjustment: The title is not stable

5. HALL AMP ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
B203-6	VR703 VR704	NO	
M. EQ.		**SPEC.**	
D.V.M.		VOLTAGE B203-6 = VOLTAGE B203-11 VOLTAGE B203-5 = VOLTAGE B203-6	

Purpose: Hall Amp Adjustment.
Symptom of Misadjustment: Hunting occurs or the focus stops.

1. Connect the jumper wire between B203-10 and GND. (IRIS close)
2. Adjust the VR703 so that Voltage at B203-6 equalize to Voltage at B203-11.
3. Connect the jumper wire between B203-10 and B203-13. (IRIS open)
4. Adjust the VR704 so that Voltage at B203-6 equalize to Voltage at B205-5.

6. PWM ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ
	RAM	EEPROM		
18	9B	—		D.V.M.
12	—	4F(H)		
SPEC.			**TP**	
			B203-6	

1. Set the IRIS to "OPEN". (SHIFT1+0)
2. Connect the D.V.M to B203-6.
3. Push "CMD" key and then push "1" and "8". (Setting Command 18)
4. Push "ADR" key and then push "9" and "B". (Setting Address 9B)
5. Push "INC" or "DEC" key so that Voltage level at B203-6 becomes Vref1+-50mV. (Vref1=Voltage at B203-5)
6. Set the IRIS to "CLOSE". (SHIFT1+1)
7. Set the IRIS to "OPEN". (SHIFT1+3)
8. Push "CMD" key, "1" and "8" keys
9. Push "ADR" key, "9" and "B" keys
10. Push "INC" or "DEC" key so that Voltage level at B203-6 becomes. Vref2+-20mV. (Vref2=B203-5 -140mV)
11. Push "CMD" key, "1" and "2" keys
12. Push "ADR" key, "4" and "F" keys
13. Push "SET" key

7. ZOOM ENCODER AND FOCUS ENCODER ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ
	RAM	EEPROM		
18	T:8C W:8D	—	object: 1m (Hunting chart)	DIGITAL VOLTMETER
12	—	T: 1F (H)		
02	—	W: 1F (L)		
SPEC.			**TP**	
To be calculated			B203 ⑧, B203 ⑨	
CONDITION			⑧→⑭ ⑦←① B203 TP ARRAY ON SENSOR	
• Focus Manual (SHIFT 1+7)				

Note:
1) Unless you replaced zoom Encoder, 3rd lens (1) unit or 4th moving frame (1) unit, do not perform this adjustment. (Because this adjustment is critical).
2) Regarding the connection of EVR, refer to preparation.(Fig. C6)

(Simplified adjustment)

1. Turn the power sw. off.
2. Replace lens unit.
3. Loosen 2 screws of Focus encoder C.B.A, and move C.B.A to centre position as shown in Fig. C22 Then tighten 2 screws.

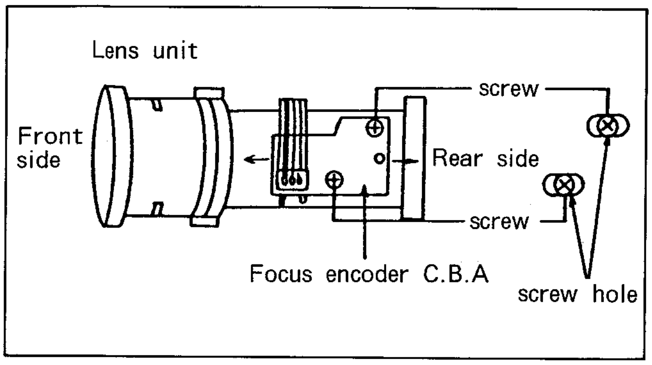


Fig. C20

4. Turn the power sw. On.
5. Set the focus to Manual focus.
6. Set the zoom to fully TELE side.
7. Aim the unit at Hunting chart for 1m distance.
8. Press the Focus ⊟ button until movement stop.
9. Set the average data (T: Data Address 8C, W: Data Address 8D).
   * Push "CMD", "1", "8"
   * Push "ADR" , "8", "C"
   * Push "DATA", "F", "0"
   * Push "SET"
   * Push "ADR", "8", "D"
   * Push "DATA", "2", "6"
   * Push "SET"
10. Confirm back focus.
11. If back focus is correct, write its data to EEPROM as follows.
   * Push "CMD", "1", "2"
   * Push "DATA", "F", "0" adjusted.
   * Push "ADR", "1", "F"
   * Push "SET"
   * Push "CMD", "0", "2"
   * Push "ADR", "1", "F"
   * Push "DATA", "2", "6" have just adjusted.
   * Push "SET"
12. If back focus is not correct, change data one by one.
   * Push "CMD", "1", "8"
   * Push "ADR", "8", "C"
   * Push "DATA" and change the data (number)
   * Push "SET"
13. Confirm back focus.
14. If back focus is correct, write its data to EEPROM. as follows.
   * Push "CMD", "1", "2"
   * Push "ADR", "1", "F"
   * Push "SET".
15. If back focus is not correct, repeat 12. to 14. If still back focus is not OK after 12.–14. is repeated, change address to "26" and repeat it.
   * Push "CMD", "1", "8"
   * Push "ADR", "8", "D"
   * Push "DATA", and change the data (number)
   * Push "SET"
16. Confirm back focus.
17. If back focus is OK, write its data to EEPROM as follow.
   * Push "CMD", "0", "2".
   * Push "ADR", "1", "F".
   * Push "SET"

(Precise Adjustment for Zoom Encoder)

1. Check the voltage on B203 8 and B203 9 before changing defective lens unit.
   For example:
   B203 8 :3.652 V
   B203 9 :1.456 V
2. Note the potential difference between B203 8 and B203 9 .
   For example:
   3.652–1.456=2.196V
3. Turn the power sw. off.
4. Replace lens unit.
5. Loosen 2 screws of Focus encoder C.B.A, and move C.B.A to centre position as shown in Fig. C20. Then tighten 2 screws.
6. Turn the power sw On.
7. Set the focus to Manual focus.
8. Set the zoom to fully TELE side.
9. Aim the unit at Hunting chart for 1m distance.
10. Press the Focus ⊟ button until movement stop.
11. Push "CMD", "1", "8".
12. Push "ADR", "8", "C".
13. Push "INC" or "DEC" so that best focus position.
14. Check the Voltage at B203–8 .
15. Subtact the Voltage which is noted step 2 from step 15.
   For example:
   If the Voltage at B203–8 is 3.662V
   3.662–2.196=1.446V
16. Set the Voltage at B203–9 to 1.446V with EVR as follows.
   * Push "CMD", "1", "8".
   * Push "ADR", "8", "D"
   * Push "INC", or "DEC" so that signal level is 1.446V.
17. Confirm the focus when zooming to WIDE side.

①	Focus is good – Go to next step 16.
②	Focus is no good around fully WIDE side –Adjust VR709 a little (within +–0.05V) at fully WIDE side. Confirm the focus with zoom. Return to step 5, if the focus is still no good. Go to step 16, if the focus is good.
③	Focus is no good between TELE to WIDE –Return to step 5. How to fix Focus encoder C.B.A: Set the zoom to WIDE side and adjust the focus focus by ⊟, ⊞ buttons. Move Focus encoder C.B.A to front side, if it get good focus by ⊟ button. Move Focus encoder C.B.A to rear side, if it get good focus by ⊞ button.

18. Turn the power sw. off, and on.
19. Confirm the focus when zooming. (If focus is no good, repeat form step 5.)
   1) Aim the unit for 70cm distance at hunting chart, and adjust the focus by Manual focus button at TELE side.
      Confirm good focus when zooming.
   2) Aim the unit for more than 10m distance, and adjust the focus by Manual focus button at TELE side.
      Confirm the focus when zooming to WIDE.

8. V-SUB ADJUSTMENT (NORMAL)

TP	ADJ.	LENS CAP	CHART
	VR203	NO	HALOGEN LAMP
M. EQ.		SPEC.	
MONITOR TV		NO BLOOMING	

(1) Zoom all the way in (Fully tele position or Full wide position) and aim the camera at the Halogen Lamp as shown in Fig. C9.

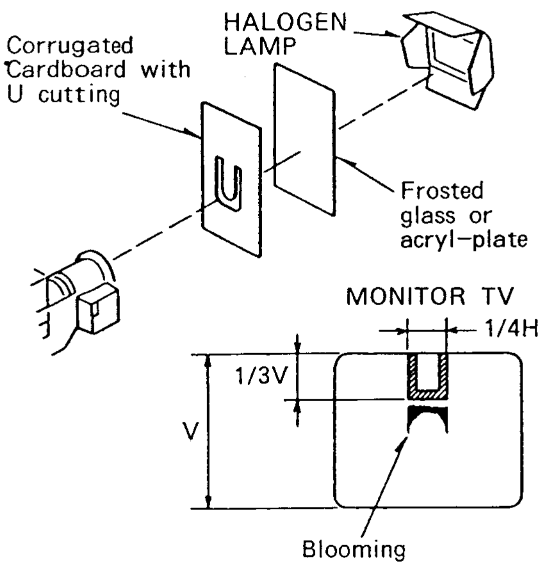

HALOGEN LAMP
Corrugated Cardboard with U cutting
Frosted glass or acryl-plate
MONITOR TV
1/4H
1/3V
V
Blooming

Fig. C21-1

(2) Set the High Speed Shutter SW to "OFF" position.

(3) Blind the lighting using frosted glass or acryl plate to diffuse incoming light. And also put a corrugated cardboard which inside is cut to "U" shape as shown in Fig. C9.

(4) Adjust VR203 so that blooming is just disappear. (If blooming is not disappeared completely, adjust until minimum blooming)

(5) High Speed Shutter "ON" and "OFF" both mode, confirm that the monitored picture does not contain the Blooming even if the camera moves as shown in Fig. C21-2.

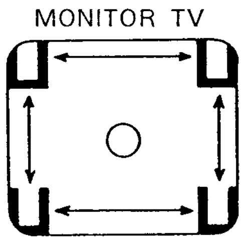


Fig. C21-2

9. ∅ R BIAS ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ
	RAM	EEPROM		
18	8E	—	J-CHART	OSCILLO-SCOPE
12	—	2F(H)		
SPEC.			TP	
V=LESS THAN 10mV			TL203	

Purpose: CCD reset pulse (amplitude) output adjustment.
Symptom of Misadjustment: The H-edges are not clear in low light.

1. Aim the camera at J-CHART.
2. Connect the Oscilloscope to TL203.
3. Push "CMD" key and then push "1" and "8". (Setting Command 18)
4. Push "ADR" key and then push "8" and "E". (Setting Address 8E)
5. Push "INC" or "DEC" key so that V level becomes less than 10mV as shown in Fig. C22.
6. Push "CMD" key and then push "1" and "2".
7. Push "ADR" key and then push "2" and "F".
8. Push "SET" key.

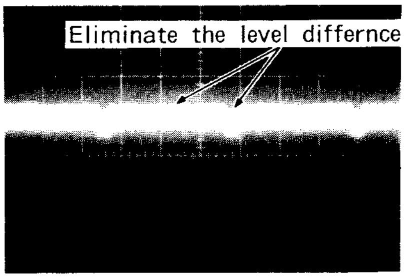


Fig. C22

10 . PEDESTAL LEVEL ADJUSTMENT

CMD	ADRESS		CHART	M. EQ.
	RAM	EEPROM		
18	8A	—		OSCILLO-SCOPE
12	—	0F		
SPEC			TP	
A=20mV+−15mV			B303-6	

1. Cover the lens or close the IRIS. (by pushing "SHIFT 1" + "0" together)
   Set the AGC MAX condition. (by pushing "SHIFT 1"+3 together.)
2. Connect the oscilloscope to B303-6 .
3. Push "CMD" key, "1" key and "8" key of EVR.
4. Push "ADR" key, "8" key and "A" key.
5. **Push "INC" key or "DEC" key so that "A" level becomes 20mV+−15mV.**
6. Push "CMD","1" and "2" keys.
7. Push "ADR","0" and "F" keys.
8. Push "SET" key.
9. Reset the AGC MAX conditon (Please Refer to Fig. C12.)

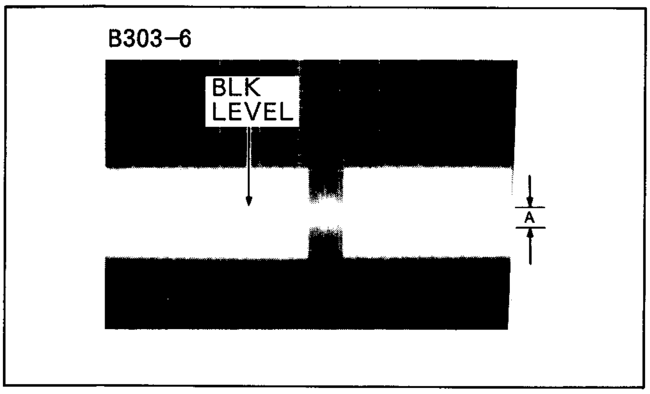


Fig. C23

11. CDS GAIN ADJUSTMENT

CMD	ADRESS		CHART	M. EQ.
	RAM	EEPROM		
18	9C	—	GRAY SCALE CHART	OSCILLO-SCOPE
02	—	4F		
SPEC			TP	
340mV+-10mV			B203-3 TL204	

Purpose: Standard element output set.
Symptom of Misadjustment: The picture is too dark or noisy.

1. Set the IRIS to "MANUAL". (SHIFT1+9)
2. Aim the camera at Gray Scale Chart.
3. Connect the Oscilloscope to TL204.
4. Push "CMD" key, "0" and "8" keys.
5. Push "ADR" key, "D" and "E" keys.
6. Push "DATA" key, "0" and "5" keys.
7. Push "SET" key.
8. Push "ADR" key, "D" key, "D" key.
9. Push the "INC" key or "DEC" key so that Signal Level at TL204 becomes 340mV+-10mV.

* 1. To 9 are initial setting for CDS GAIN Adjustment.
If signal level at TL204 is not 340mV+-10mV, change the data "05" to "OF" for address "DE" step by step.(Return to step 4)

11. Connect the Oscilloscope to B203-3 .
12. Push "CMD" key and then push "1" and "8".
13. Push "ADR" key and then push "9" and "C".
14. Push "INC" or "DEC" so that signal level at TP203 becomes 340mV+-10mV as shown in Fig. C24.
15. Push "CMD" key and then push "0" and "2".
16. Push "ADR" key and then push "4" and "F".
17. Push "SET" key.

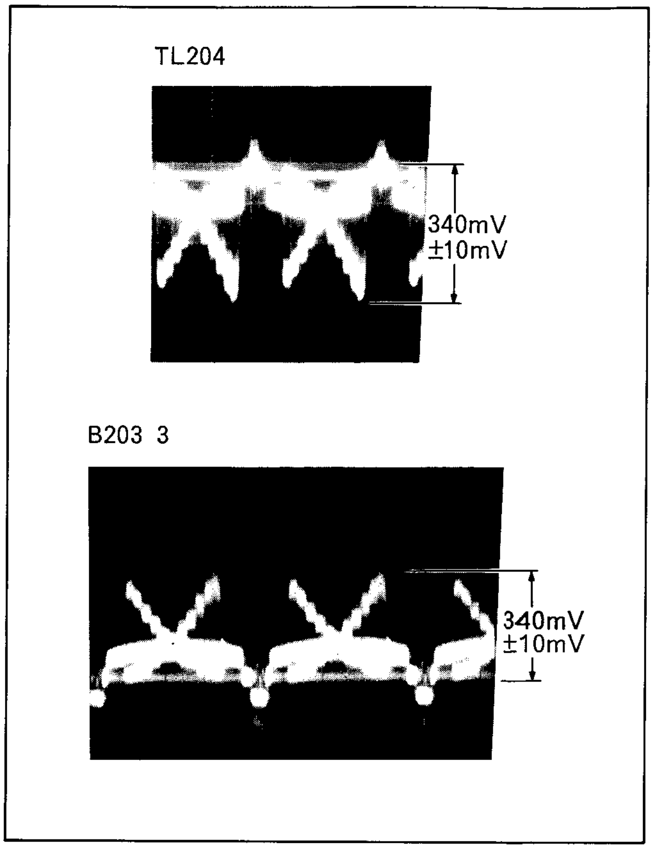


Fig. C24

12. AGC ADJUSTMENT

CMD	ADRESS		CHART	M. EQ.
	RAM	EEPROM		
08	79	—	GRAY SCALE CHART	OSCILLO-SCOPE
12	—	6A		
SPEC			TP	
340mV+-10mV			TL204 B203-1	

Note:
Perform this adjustment after finishing the CDS GAIN ADJUSTMENT.

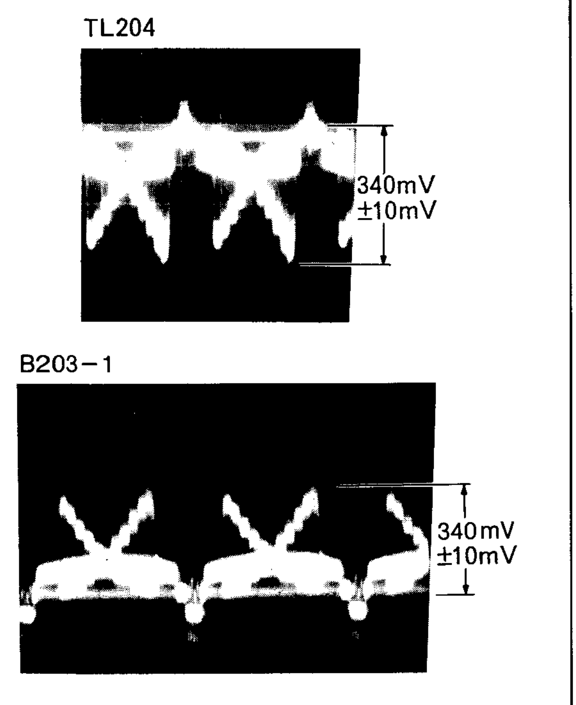
Purpose: Set standard signal gain.
Symptom of Misadjustment: The picture is sometimes too dark or sometimes too bright.

1. Set the IRIS to "MANUAL". (SHIFT1+9)
2. Aim the camera at Gray Scale Chart.
3. Connect the Oscilloscope to TL204.
4. Push "CMD" key, "0" and "8" keys.
5. Push "ADR" key, "D" and "E" keys.
6. Push "DATA" key, "0" and "5" keys.
7. Push "SET" key.
8. Push "ADR" key, "D" key, "D" key.
9. Push the "INC" key or "DEC" key so that Signal Level at TL204 becomes 340mV+-10mV.

* 1. To 9 are initial setting for CDS GAIN Adjustment.

* If signal level at TL204 is not 340mV+-10mV, change the data "05" to "OF" for address "DE" step by step.(Return to step 4)

10. Connect the Oscilloscope to B203 1 .
11. Push "CMD" key and then push "0" and "8".
12. Push "ADR" key and then push "7" and "9".
13. Push "INC" or "DEC" so that signal level at B203 1 becomes 340mV+−10mV as shown in Fig. C26.
14. Push "CMD" key and then push "1" and "2".
15. Push "ADR" key and then push "6" and "A".
16. Push "SET" key.



Fi g. C25

13 . A/D INPUT LEVEL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TL 204 B203−2	VR 205	NO	GRAY SCALE CHART

M. EQ.	SPEC.
OSCILLOSCOPE	1.10+−50mV

Pu rpose: A/D converter input level adjustment.
Symptom of Misadjustment: The picture becomes too dark or too bright.

1. Set the IRIS to "MANUAL". (SHIFT1+9)
2. Aim the camera at Gray Scale Chart.
3. Connect the Oscilloscope to TL204.
4. Push "CMD" key, "0" and "8" keys.
5. Push "ADR" key, "D" and "E" keys.
6. Push "DATA" key, "0" and "5" keys.
7. Push "SET" key.
8. Push "ADR" key, "D" key, "D" key.
9. Push the "INC" key or "DEC" key so that Signal Level at TL204 becomes 340mV+−10mV.

* 1. To 9 are initial setting for A/D input Adjustment.

* If signal level at TL204 is not 340mV+−10mV, change the data "05" to "OF" for address "DE" step by step.(Return to step 4)

10. Connect the Oscilloscope to B203 2 .
11. Adjust VR205 so that signal level at B203 2 becomes 1.10V+−50mV as shown in Fig. C27.

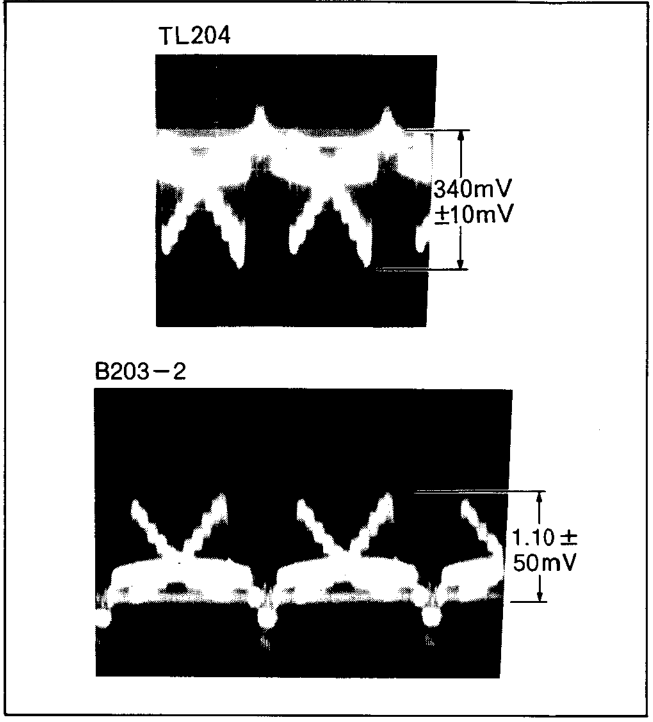


Fig. C26

14. ALC ADJUSTMENT (1)

CMD	ADRESS		CHART	M. EQ.
	RAM	EEPROM		
08	F5	—	GRAY SCALE CHART	OSCILLO-SCOPE
12	—	2C		

SPEC	TP
1.10+−50mV	B203−2

Note:
Perform this adjustment after finishing the CDS GAIN, AGC and A/D INPUT LEVEL ADJUSTMENT.

Purpose: ALC level adjustment.
Symptom of Misadjustment: The picture is too white or too dark.

1. Set the IRIS to Auto. (SHIFT1+A)
2. Push "CMD", "0" and "8" keys.
3. Push "ADR", "F" and "8" keys.
4. Push "DATA", "0", "0" and "SET" keys.
5. Push "CMD", "0" and "8" keys.
6. Push "ADR", "F" and "7" keys.
7. Push "DATA", "A", "A" and "SET" keys.
8. Push "CMD", "0" and "8" keys.
9. Push "ADR", "F" and "5" keys.
10. Aim the camera at Gray Scale Chart.
11. Connect the oscilloscope to B203−2 .
12. Push "INC" or "DEC" key so that waveform is 1.1V+−50mV.
13. Push "CMD", "1" and "2" keys.
14. Push "ADR", "2" and "C" keys.
15. Push "SET" key to write its adjusted data in EEPROM.

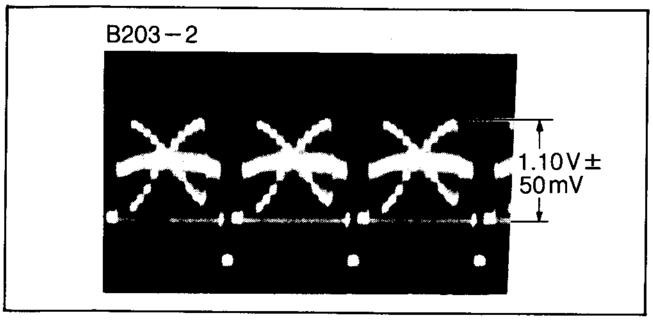


Fig. C28

15. ALC ADJUSTMENT (2)

CMD	ADRESS		CHART	M. EQ.
	RAM	EEPROM		
08	F6	—	GRAY SCALE CHART	OSCILLO-SCOPE
02	—	2C		
SPEC			TP	
1.10V+-50mV			B203-2	

Purpose: ALC level adjustment.
Symptom of Misadjustment: Same as ALC (1).

1. Set the IRIS to Auto. (SHIFT1+A)
2. Push "CMD", "0" and "8" keys.
3. Push "ADR", "F" and "8" keys.
4. Push "DATA", "A", "A" and "SET" keys.
5. Push "CMD", "0" and "8" keys.
6. Push "ADR", "F" and "7" keys.
7. Push "DATA", "0", "0" and "SET" keys.
8. Push "CMD", "0" and "8" keys.
9. Push "ADR", "F" and "6" keys.
10. Aim the camera at Gray Scale Chart.
11. Connect the oscilloscope to B203-2 .
12. Push "INC" or "DEC" key so that waveform is 1.1V+-50mV.(Same as the ALC Adjustment (1).)
13. Push "CMD", "0" and "2" keys.
14. Push "ADR", "2" and "C" keys.
15. Push "SET" key to write its adjusted data in EEPROM.
16. Push "CMD", "0" and "8" keys.
17. Push "ADR","F" and "7" keys.
18. Push "DATA", "A", "A" and "SET" keys.
19. Push "CMD", "0" and "8" keys.
20. Push "ADR", "F" and "8" keys.
21. Push "DATA", "6", "6" and "SET" keys.

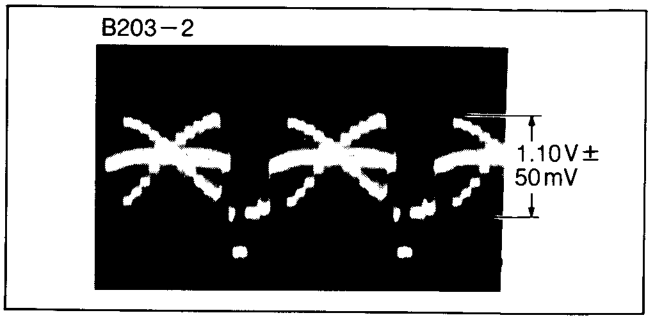


Fig. C29

16. BACK LIGHT ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ
	RAM	EEPROM		
04	—	2C 3C 4C		
14	—	2C 3C 4C		
02	—	3C 4C 5C		
12	—	3C 4C 5C		
SPEC.			TP	
To be calculated				

NOTE :
Perform this adjustment after finishing the ALC (1),ALC (2) adjustmnet.

NO.	ITEM	EEPROM ADDRESS	CMD	RESULT OF CALCULATION	FORMULA
1	m1blc1	3C (upper bit)	READ: 14 WRITE: 12		ADR "2C" +22
2	m1blc2	4C (upper bit)	READ: 14 WRITE: 12		ADR "3C" +22
3	m1blc3	5C (upper bit)	READ: 14 WRITE: 12		ADR "4C" +22
4	m2blc1	3C (Lower bit)	READ: 04 WRITE: 02		ADR "2C" +24
5	m2blc2	4C (Lower bit)	READ: 04 WRITE: 02		ADR "3C" +24
6	m2blc3	5C (Lower bit)	READ: 04 WRITE: 02		ADR "4C" +24

CALUCULATION FORMULA FOR BACK LIGHT ADJUSTMENT
Fig. C30

NOTE:

Command	Communication	Contents
02	EVR Fixture → EEPROM	Writing the data to address of EEPROM..(Lower Digit)
12	EVR Fixture → EEPROM	Writing the data to address of EEPROM. (Upper Digit)
04	EEPROM → EVR Fixture	Reading out the data of EEPROM. (Lower Digit)
14	EEPROM → EVR Fixture	Reading out the data of EEPROM. (Upper Digit)

(How to calculate and enter the data)

1) READ the data from proper address of EEPROM, which is indicated in following formula column.

2) The data which is read out is hexadecimal number, therefore this must be converted to decimal number.You can do it easily using hexadecimal.decimal conversion table.(Fig.C14)

3) Substitute the read out data in to formula and calculate it.

4) Convert the result of calculation to hexadecimal value using conversion table.

5) Enter the result to EEPROM address.

(For example)

ITEM 1 : m1blc1

FORMULA : ADR"2C" + 22

COMMAND : READ -----14
WRITE----12

EEPROM ADDRESS : 3C

1) Read out the data

ADR"2C": Set the command to "14".
Set the address to "2C".
Push the "SET" button.
Number which is indicated in "DATA" LED is a data of ADR"2C"(address 2C), for example,if indicated data is "56", substitute "56" to ADR "2C".

If data which is read out from ADR"2C" = "6C".
above formula becomes
m1blc1 = 56 + 22

2) Convert the hexadecimal data into decimal number using conversion table. For example, "56" in hexadecimal is "86" in decimal from intersection of 5 and 6.
Substitute its to formula.
Therefore,

m1blc1 = 86 + 22 = 108

3) Convert the result "108" to hexadecimal using conversion table(Fig.C13).
"108" decimal is "6C" in hexadecimal.
Write the "6C" into EEPROM address "3C".

* Set the command to "12".
* Set the Address to "3C".
* Set the data to "6C".
* Push the "SET" key.

17. Y CLIP LEVEL ADJUSTMENT

CMD	ADRESS		CHART	M. EQ.
	RAM	EEPROM		
18	AF	—	WHITE CHART	OSCILLO-SCOPE
02	—	OF		
SPEC			TP	
V/S=2.67+-0.1			B303-6	

1. Set the IRIS to "OPEN". (SHIFT1+0)
2. Aim the camera at White Chart.
3. Connect the Oscilloscope to B303-6 .
4. Push "CMD" key and then push "1" and "8".
5. Push "ADR" key and then push "0" and "F".
6. Push "INC" or "DEC" key so that level ratio of V and S becomes 2.67+-0.1.
7. Push "CMD" key and then push "0" and "2".
8. Push "ADR" key and then push "O" and "F".
9. Push "SET" key.

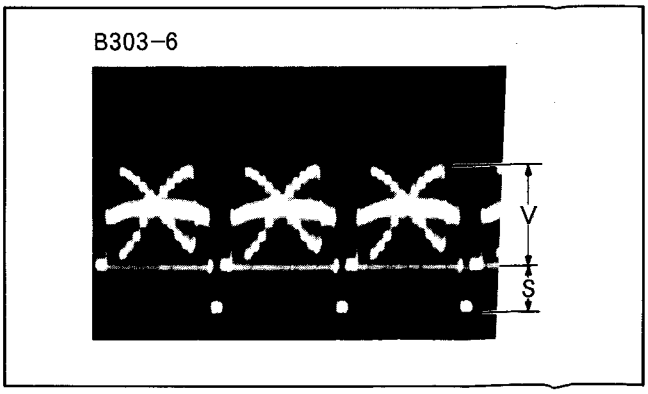


Fig. C31

18. INDOOR WHITE BALANCE ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ
	RAM	EEPROM		
09	BB (R-Y) AB (B-Y)	—	WHITE CHART	VECTOR-SCOPE
02	—	25 (R-Y)		
12	—	25 (B-Y)		
SPEC.			TP	
CENTRE OF VECTORSCOPE			VIDEO OUT	

Purpose: Set standard white level for each color temperature.
Symptom of Misadjustment: White becomes bluish or reddish.

1. Connect the Video out to Vectorscope.
2. Aim the camera at white chart. and push SHIFT 1+8 or push the white balance button (please connect the camera operation unit to process C.B.A.) for white set (please confirm, vector came to center).
3. Set the command "09" by pushing "CMD", "0" and "9" keys.
4. Set the address to "BB" by pushing the "ADR" key, "B" key and "B" key.
5. Push the "SET" key for Read out the data from proper address of CPU–RAM. And then change command to "02" by pushing the "CMD" key and "0" key and "2" key, and change the address to "25" by pushing "ADR" key, "2" and "5" key (Do not change the data).
6. Push the "SET" key to write its data to EEPROM Directly.
7. Change the command "09" by pushing "CMD", "0" and "9" keys.
8. Set the address to "AB" by pushing the "ADR" key, "A" key and "B" key.
9. Push the "SET" key for Read out the data from proper address of CPU–RAM. And then change command to "12" by pushing the "CMD" key and "1" key and "2" key, and change the address to "25" by pushing "ADR" key, "2" key, and "5" key. (Do not change the data).
10. Push the "SET" key to write its data to Directly.

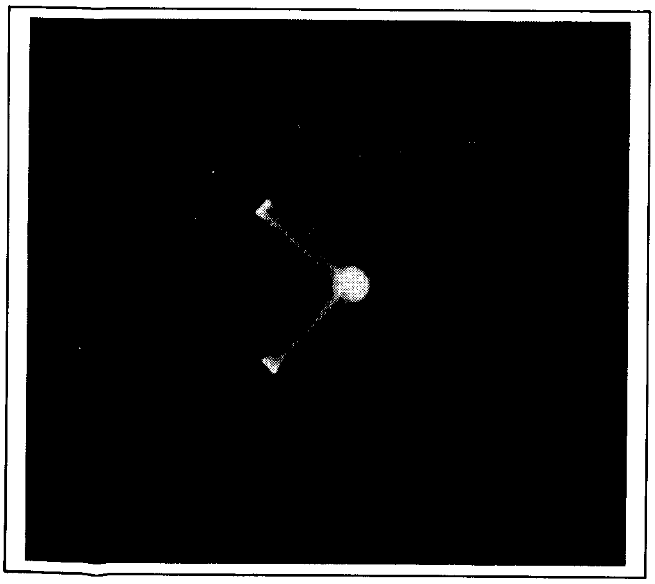


Fig. C32

19. COLOUR PHASE AND GAIN ADJUSTMENT (INDOOR)

CMD	ADDRESS		CHART	M. EQ
	RAM	EEPROM		
08	BE (R-Y G) BF (R-Y P) AE (B-Y G) AF (B-Y P)	—	COLOUR CHIP CHART	VIDEO OUT
02	—	05 (R-Y G) 15 (R-Y P)		
12	—	05 (B-Y G) 15 (B-YP)		
SPEC.			TP	
			RED: 105+−3 degree/PHASE 210+−10%/GAIN YEL: 165+−3 degree/PHASE 140+−10%/GAIN	

Note:
Regarding the connection of EVR, refer to preparation (Fig. C6) and Initial setting.

1. Aim the camera at colour chip chart.
2. Connect the video output to vectorscope.

<R-Y GC> (Step 3 to 8 are R-Y gain Adjustment)

3. Set the command to "08" by pushing the "CMD" key, "0" key and "8" key.
4. Set the address to "BE" (R–Y GC) by pushing the "ADR" key, "B" key and "E" key.
5. Push the "INC" or "DEC" key so that phase of Red and yellow Vector approach to the spec.
6. When best point comes, Set the command to "02" by Pushing the "CMD" key, "0" key and "2" key.
7. Set the address to "05" by pushing the "ADR" key, "0" key and "5" key.
8. Push the "SET" key.

<R-Y PHASE> (Step 9 to 12 are R-Y phase Adjustment)

9. Change the command to "08", and change the address to "BF" (Same procesures as 3, 4).
10. Push the "INC" key or "DEC" key so that phase of Red and Yellow vector approach to the spec.
11. When best point comes, change the command to "02", and change the address to " 15" (Same procedures as 6, 7).
12. Push the "SET" key.

<B-Y GC> (Step 13 to 16 are B-Y gain Adjustment)

13. Change the command to "08" and change the address to "AE" (B–Y GC) (same procesures as 3, 4).
14. Push the "INC" key or "DEC" key so that gain of Red and Yellow vector approach to the spec.
15. When best point comes, change the command to "12" and change the address to "05". (Same procedures as 6, 7)
16. Push the "SET" key.

<B-Y PHASE> (Step 17 to 20 are B-Y Phase Adjustment)

17. Change the command to "08" and change the address "AF" (B–Y PHASE) (Same procedures as 3, 4).
18. Push the "INC" key or "DEC" key so that gain of Red and Yellow vector approach to the spec.
19. When best point comes, change the command to "12" and change the address to "15" (Same procedures as 6, 7).
20. Push the "SET" key.

21. Repeat the 3 to 20 until vectors become within spec as shown Fig. C33.

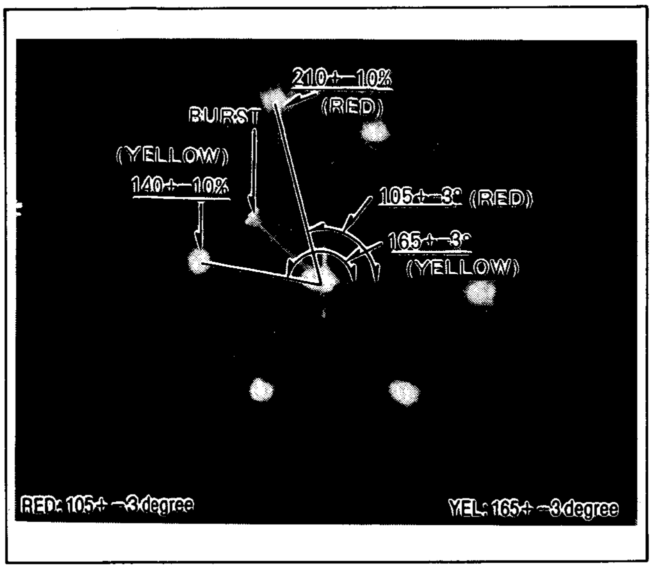


Fig. C33

20. OUTDOOR WHITE BALANCE ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ
	RAM	EEPROM		
09	BB (R-Y) AB (B-Y)	—	WHITE CHART	VECTOR-SCOPE OR OSCILLO-SCOPE
02	—	21 (R-Y)		
12	—	21 (B-Y)		
SPEC.			TP	
VECTOR COMES CENTRE OR WAVEFORM IS MINIMIZED			VIDEO OUT	
CONDITION				
TEMPERATURE CONVERSION FILTER: VFK0713 (C12) VFK0716 (C2) IRIS: ALC				

Purpose: Set standard white level for each color temperature.

Symptom of Misadjustment: White becomes bluish or reddish.

1. Connect the Video out to Vectorscope.
2. Cover the lens with colour temperature conversion filter VFK0713 and VFK0716 to imitate the outdoor lighting.
3. Aim the camera at white chart. and push the SHIFT 1+8 or push the white balance button (please connect the camera operation unit to process C.B.A.) for white set. (Please confirm, vectors came to center)
4. Set the command "09" by pushing "CMD", "0" and "9" keys.
5. Set the address to "BB" by pushing the "ADR" key, "B" key and "B" key.
6. Push the "SET" key for Read out the data from proper address of CPU-RAM. And then change command to "02" by pushing the "CMD" key and "0" key and "2" key, and change the address to "21" by pushing "ADR" key, "7" key, and "1" key. (Do not change the data)
7. Push the "SET" key to write its data to EEPROM Directly.
8. Change the command "09" by pushing "CMD", "0" and "9" keys.
9. Set the address to "AB" by pushing the "ADR" key, "A" key and "B" key.
10. Push the "SET" key for Read out the data from proper address of CPU-RAM. And then change command to "12" by pushing the "CMD" key and "1" key and "2" key, and change the address to "21" by pushing "ADR" key, "2" key, and "1" key. (Do not change the data)
11. Push the "SET" key to write its data to EEPROM Directly.

Fig. C34

21. COLOUR PHASE AND GAIN ADJUSTMENT (OUTDOOR)

CMD	ADDRESS		CHART	TP
	D/A	EEPROM		
08	BE (R-Y G) BF (R-Y P) AE (B-Y G) AF (B-Y P)	—	COLOUR CHIP CHART	VIDEO OUT
02	—	01 (R-Y G) 11 (R-Y P)		
12	—	01 (B-Y G) 11 (B-Y P)		
M. EQ.			SPEC.	
VECTORSCOPE			RED: 105+ −3 degree/PHASE 190±10%/GAIN YEL: 165+ −3 degree/PHASE 130±10%/GAIN	

1. Connect the Video output to vectorscope.
2. Aim the camera at colour chip chart. and cover the lens with colour temperature conversion filter VFK0713 and VFK0716.

<R-Y GC> (Step 3 to 6 are R-Y gain Adjustment)

3. Set the command to "08" by pushing the "CMD" key, "0" key and "8" key.

4. Set the address to "BE" (R–Y GAIN) by pushing the "ADR" key, "B" key and "E" key.
5. Push the "INC" key or "DEC" key so that phase of Red and Yellow vectors approach to spec.
6. When best point comes, change the command to "02" by pushing "CMD" key, "0" key and "2" key and change the address to "01" by pushing the "ADR" key, "0" key and "1" key (Do not change the data) and then push the "SET" key to write its adjusted data into EEPROM directly.

<R-Y PHASE> (Step 7 to 9 are R-Y Phase Adjustment>

7. Change the command to "08" by pushing the "CMD" key, "0" key and "8" key.
   Change the address to "BF" by pushing the "ADR" key, "B" key and "F" key.
8. Push the "INC" key or "DEC" key so that phase of Red and Yellow vectors approach to the spec.
9. When best point comes change the command to "02" by pushing the "CMD" key, "0" key and "2" key. (Do not change the data), and change the address to "11" by pushing "ADR" key, "1" key and "1" key.
   Then, Push the "SET" key to write its adjusted data to EEPROM Directly.

<B-Y GC> (Step 10 to 12 are B-Y gain Adjustment)

10. Change the command to "08" by pushing the "CMD" key "0" key and "8" key. Change the address to to "AE" (B–Y Gain) by pushing "ADR" key, "A" key and "E" key.
11. Push the "INC" or "DEC" key so that gain of Red and Yellow vectors approach to the spec.
12. When best point comes, change the command to "12" and change the address to "01" while keeping the data.
    Then, Push the "SET" key to write its adjusted data to EEPROM directly.

<B-Y PHASE> (Step 13 to 15 are B-Y Phase Adjustment>

13. Change the command to "08".
    Change the address to "AF" (B–Y Gain).
14. Push the "INC" or "DEC" key so that gain of Red and Yellow vectors approach to the spec.
15. When the best point comes, change the command to "12" and change the address to "11" (do not change the data). Then, Push the "SET" key to write adjusted data to EEPROM directly.

16. Repeat the 3. to 15. until vectors become within spec as shown in Fig. C35.

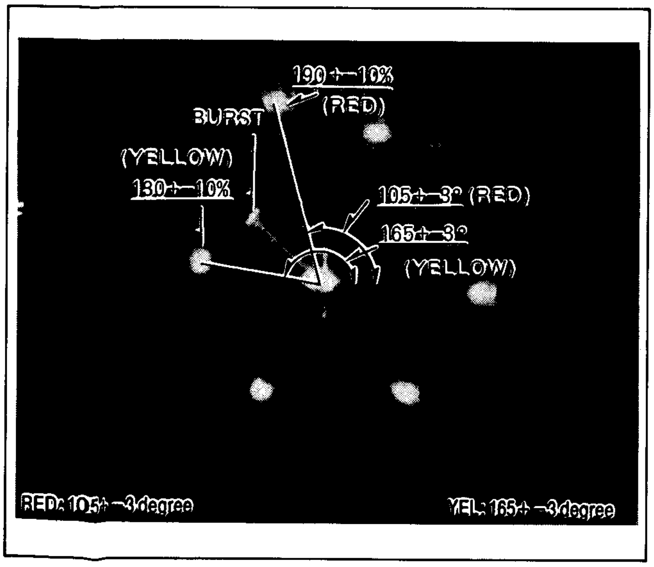


Fig. C35

22. DATA WRITING FOR COLOUR REPRODUCTION

As stated before, each adjustment voltage are memorized in EEPROM as digital data.
Regarding colour reproduction adjustments such as white balance, phase and gain adjustments, only adjustments have been performed at indoor condition (3200 degree kelvin) and outdoor condition (5100 degree kelvin).
EEPROM needs the data at other condition, too such as data at 3600 degree kelvin, 4500 degree kelvin and 6000 degree kelvin.
In order to fulfill the entering rest of these data, following calculation have to be done and result must be entered to proper address of EEPROM.

Note 1:
If VFK0701ROM2 (New ROM) is instaled to the EVR Fixture (VFK0644), EVR Fixture can calculate the colour reproduction data (Fig. C36) then calculation results are entered to proper address of EEPROM automatically.
Manner of Automatic calculation is as follows.
Pushing "SHIFT2" and "3" key together.

(How to calculate and enter the data)

1) Read the data from proper address of EEPROM, which is indicated in following formula column.
2) The data which is read out is hexadecimal number, therefore, this must be converted to decimal number. You can do it easily using hexadecimal/decimal conversion table. (Fig. C13).
3) Substitute the read out data in to formula and calculate it.
4) Convert the result of calculation to hexadecimal value using conversion table.
5) Enter the result to EEPROM address.
   Item shows the contents of adjustment address, for example, R–Y WB36 means R–Y white Balance at 3600 degree kelvin.

(For example)

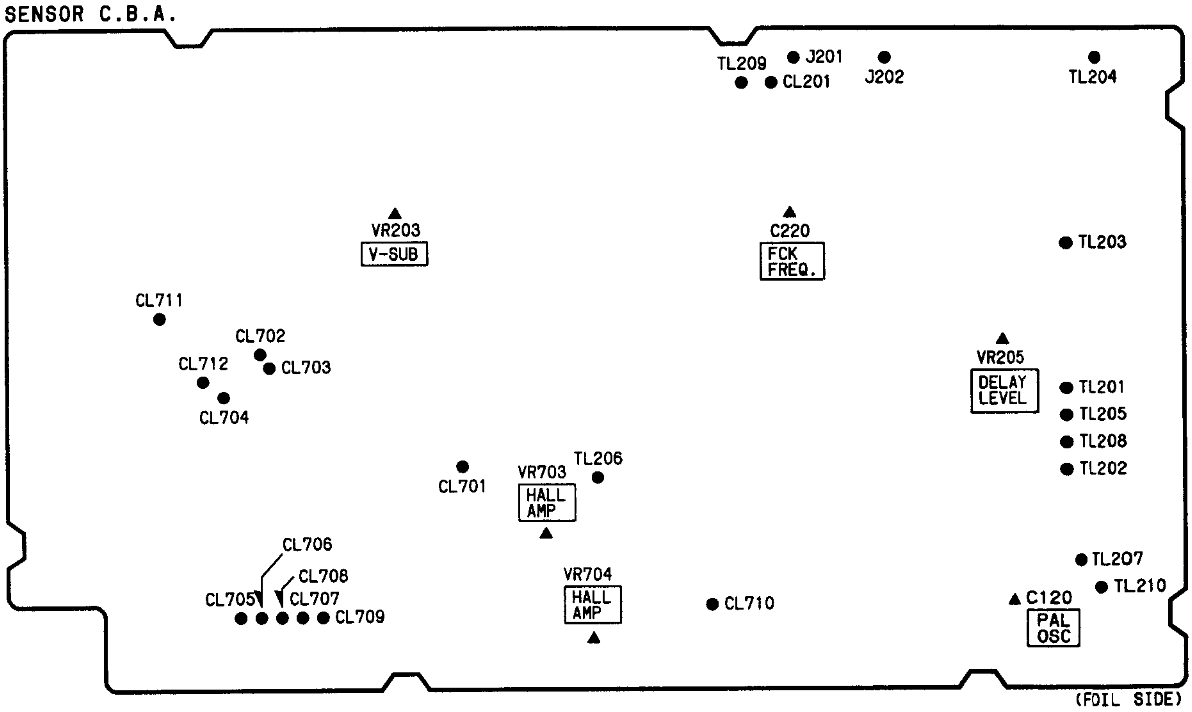
ITEM: R–Y GC 36

FORMULA: ADR03+0.636 (ADR01–ADR05)

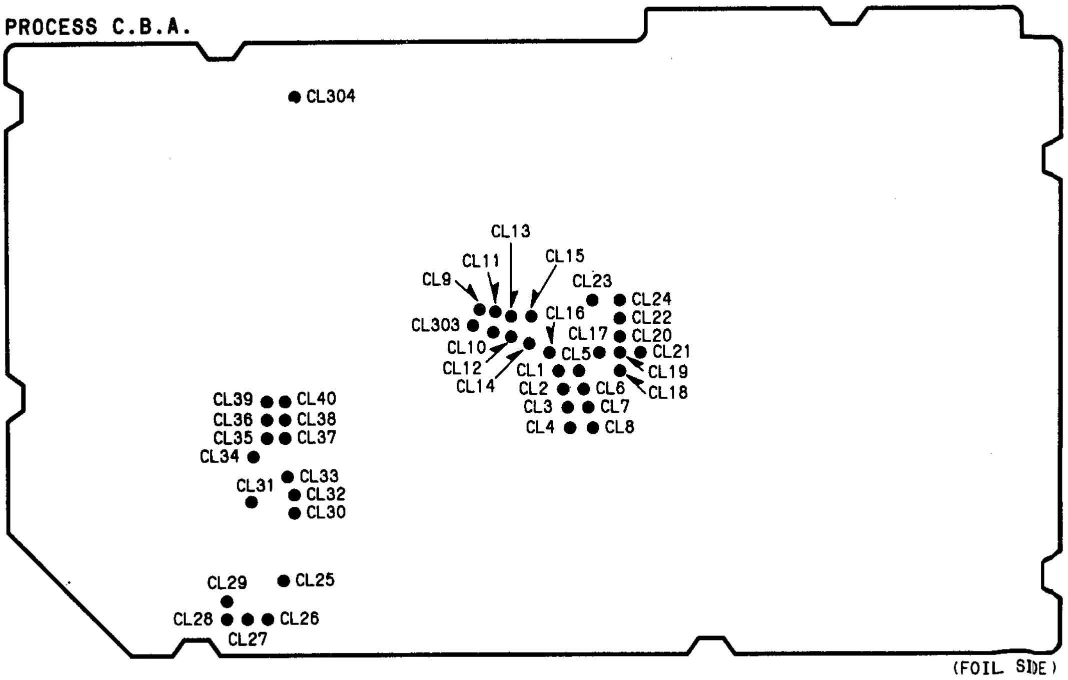
EEPROM ADDRESS: 03

1) Read out the data
   ADR06 : Set the command to "04".
   Set the address to "03".
   Push the "SET" button.
   Number which is indicated in "DATA" LED is a data of ADR03(Address "03") for example, if indicated data is "56", substitute "56" to ADR03.
   As the same way, read out the data from address "01".
   For example, if data which are read out are ADR01 ="6C", ADR03="56" above formula becomes:
   R–Y G C 36 = 56+0.636 (6C–56).
2) Convert the hexadecimal data into decimal number using conversion table. For example, "56" in hexadecimal is "86" in decimal from inter section of 5 and 6.
   Substitute its to formula.
   There fore,
   R–Y G C 36 = 86+0.636 (108–86)
   = 86+0.636 (22)
   = 99.992=100

3) LOCATION OF TEST POINTS AND CONTROLS (1)


SENSOR C.B.A.

TL209
J201
CL201
J202
TL204
VR203
V-SUB
C220
FCK FREQ.
TL203
CL711
CL702
CL712
CL703
CL704
VR205
DELAY LEVEL
TL201
TL205
TL208
TL202
CL701
VR703
HALL AMP
TL206
CL706
CL708
CL705
CL707
CL709
VR704
HALL AMP
CL710
TL207
TL210
C120
PAL OSC
(FOIL SIDE)


PROCESS C.B.A.

CL304
CL13
CL11
CL15
CL9
CL23
CL24
CL303
CL16
CL22
CL17
CL20
CL10
CL5
CL21
CL12
CL1
CL19
CL14
CL2
CL6
CL18
CL3
CL7
CL4
CL8
CL39
CL40
CL36
CL38
CL35
CL37
CL34
CL31
CL33
CL32
CL30
CL29
CL25
CL28
CL26
CL27
(FOIL SIDE)

2-5-3. ELECTRICAL ADJUSTMENT FOR VTR SECTION

TEST EQUIPMENT AND TOOLS

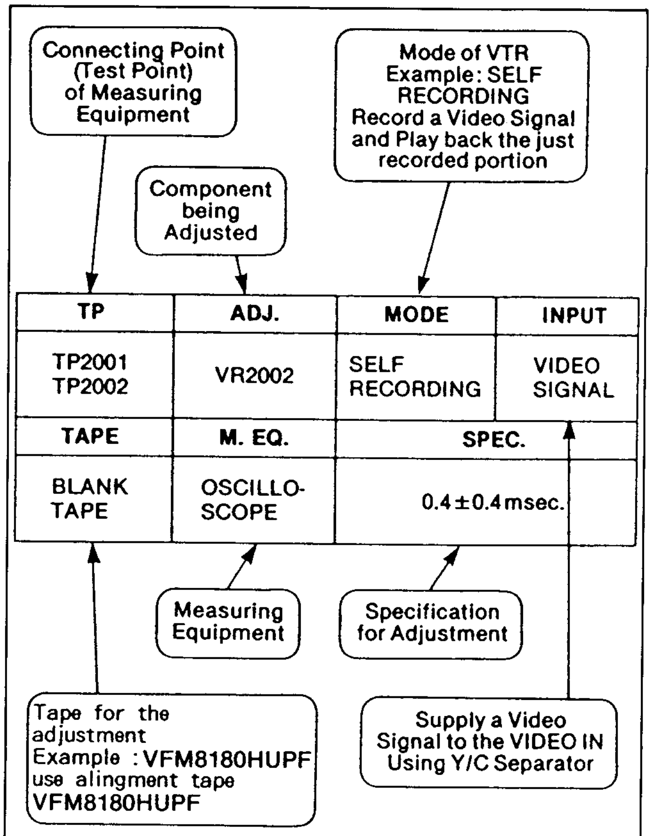
The following equipment is required for adjustment of the VTR section of VHS-C Movie.

1. VTVM (Vacuum Tube Volt Meter)
   DVM (Digital Volt Meter)
   Voltage Range : 0.01～50V
2. Dual Trace Oscilloscope
   Voltage Range : 0.06～50V/div
   Frequency Range : 0～50MHz
   Probe : 10:1 or 1:1
3. Frequency counter
   Frequency Range : 0～10MHz
4. Signal Generator (Sinewave)
   Frequency Range : 0～10MHz
5. Video Sweep Generator
   Frequency Range : 0～10MHz
6. Colour Monitor TV
7. Plastic Tip Driver
8. VHS-C Alignment Tape
9. VHS-C Blank Tape
10. VHS-C Blank Tape
11. Pattern Generator
12. Vectorscope

PREPARATION

1. Remove the casing panels
   (Refer to the disassemble method)
2. Connect the extension cable if necessary..
   VFK0686
   VFK0725
   VFK0726

HOW TO READ THE ADJUSTMENT PROCEDURES


Connecting Point (Test Point) of Measuring Equipment
Component being Adjusted
Mode of VTR Example: SELF RECORDING Record a Video Signal and Play back the just recorded portion
Measuring Equipment
Specification for Adjustment
Tape for the adjustment Example : VFM8180HUPF use alingment tape VFM8180HUPF
Supply a Video Signal to the VIDEO IN Using Y/C Separator

TP	ADJ.	MODE	INPUT
TP2001 TP2002	VR2002	SELF RECORDING	VIDEO SIGNAL
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO-SCOPE	0.4±0.4msec.	

Note: If ☒ appears in any block, this means it is not used or not important.

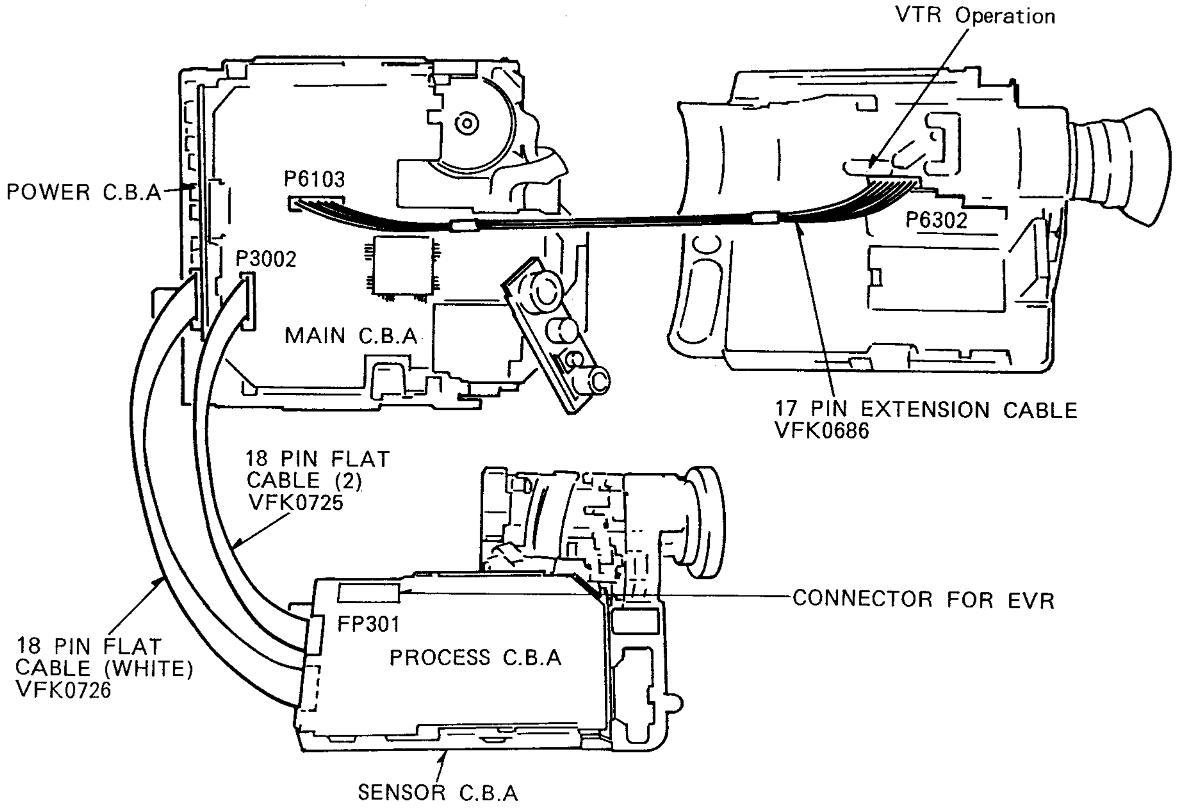

VTR Operation
POWER C.B.A
P6103
P3002
MAIN C.B.A
P6302
17 PIN EXTENSION CABLE VFK0686
18 PIN FLAT CABLE (2) VFK0725
CONNECTOR FOR EVR
FP301
PROCESS C.B.A
18 PIN FLAT CABLE (WHITE) VFK0726
SENSOR C.B.A

Fig. V1

FOR TRIGGERING OF THE OSCILLOSCOPE

To trigger the Oscilloscope, the following test point is used.

H. rate : VIDEO OUT(TP3005)
V. rate : TP6201 (Head Switching signal)

Note:
Before the electrical adjustment, set the Unit as following conditions except for special instructions in each adjustment item.

POWER SECTION

1. REG. 5V ADJUSTMENT

Purpose:
To properly align the regulated 5V voltage fed to various circuits with the DC at 4.62V DC+−0.025V.

Symptom of Misadjustment:
All circuit in the Unit will not operate properly.

TP	ADJ.	MODE	INPUT
CP1001(HOT) CP1006(GND)	VR1001	CAMERA RECORDING EIS ON	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	4.62+−0.025V	

Note:
EVF, Camera Unit , and camera operation unit are connect to the VTR unit.
Turn the Power sw on and then set the DIS system to the on position.

1. Connect the D.V.M. To CP1001(HOT) and CP1006(GND) Adjust the VR1001 so that D.V.M. becomes 4.62+−0.025V.

2. CAMERA 5V ADJUSTMENT

Purpose:
To properly align the regulated 5V voltage fed to various circuit with the DC at 4.4V DC+−0.025V.

Symptom of Misadjustment:
All circuit in the Unit will not operate properly.

TP	ADJ.	MODE	INPUT
CP1002(HOT) CP1006(GND)	VR1002	CAMERA RECORDING EIS ON	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	4.40+−0.025V	

Note:
EVF, Camera Unit, and camera operation unit are connect to the VTR unit.
Turn the power sw on and then set DIS system to the on position.

1. Connect the D.V.M. To CP1002(HOT) and CP1006(GND) Adjust the VR1002 so that D.V.M. becomes 4.40+−0.025V.

3. CAMERA 9V ADJUSTMENT

Purpose:
To properly align the regulated 8.6V voltage fed to various circuits with the DC at 8.65V DC+0.07V DC10.03V.

Symptom of Misadjustment:
All circuits in the Unit will not operate properly.

TP	ADJ.	MODE	INPUT
CP1003(HOT) CP1006(GND)	VR1003	CAMERA RECORDING EIS ON	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	8.65+0.07V −0.03V	

Note:
DIS system must be set to the on position.

1. Connect the D.V.M. To CP1003(HOT) and CP1006(GND) Adjust the VR1003 so that D.V.M. becomes 8.65+0.07V,−0.03V.

SERVO SECTION

4. PG SHIFTER ADJUSTMENT

Purpose:
Determine the Head Switching point during play−back.

Symptom of Misadjustment:
May cause Head Switching Noise and/or Vertical jitter in the picture.

TP	ADJ.	MODE	INPUT
TP6201 VIDEO OUT TP3005	VR6201	PLAY	
TAPE	**M. EQ.**	**SPEC.**	
ALIGNMENT TAPE (VFM8180HUPF)	OSCILLO-SCOPE	6.5H±0.5H	

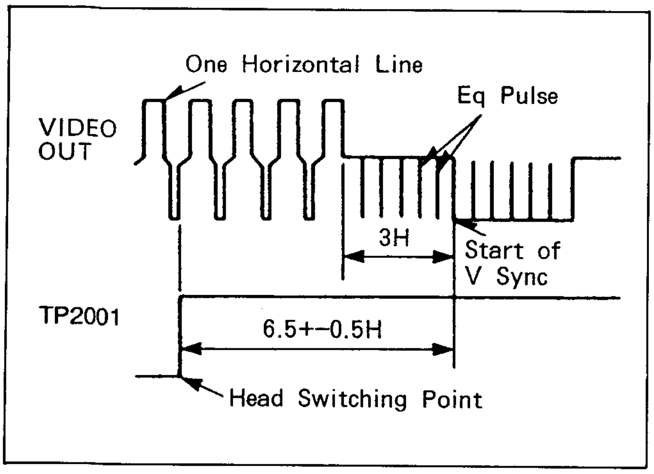

One Horizontal Line
Eq Pulse
VIDEO OUT
3H
Start of V Sync
TP2001
6.5+−0.5H
Head Switching Point

Fig. V2

LUMINANCE & CHROMINANCE SECTION

5. COLOUR 90 DEGREE, COLOUR 270 DEGREE ADJUSTMENT

Purpose:
Set burst phase.

Symptom of Misadjustment:
Colour phase shift.

TP	ADJ.	MODE	INPUT
VIDEO OUTPUT	VR8002 VR8003 VR8001	STOP	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
	VECTOR-SCOPE	SHOWN IN FIG. 6	

1. Connect the jumper wire. Through capacitor (10V, 47uF) between TL8008 (P3002−17) and GND in order to eliminate the B−Y signal.
2. Supply Video out signal to vectorscope.
3. Aim the camera at colour bar chart.
4. Adjust the VR8002 so that signal comes on R−Y axis as shown below.
5. Disconnect the jumper wire from TL8008 (P3002−17) and then connect it to the TL8007 (P3002−18) in order to eliminate the R−Y signal.
6. Adjust the VR8003 so that signal comes on B−Y axis as shown below.

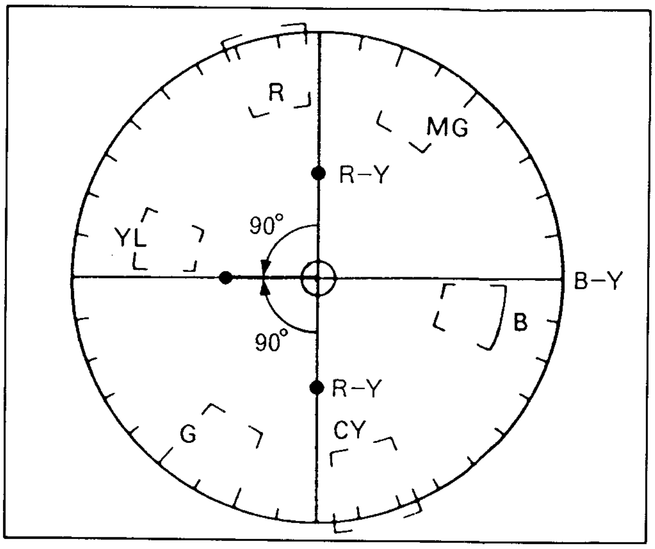

R
MG
R−Y
YL
90°
B−Y
B
90°
R−Y
G
CY

Fig. V3

7. Disconnect the jumper wire.
8. Adjust the VR8001 so that burst vector comes on burst axis as shown in Fig.V3−1.

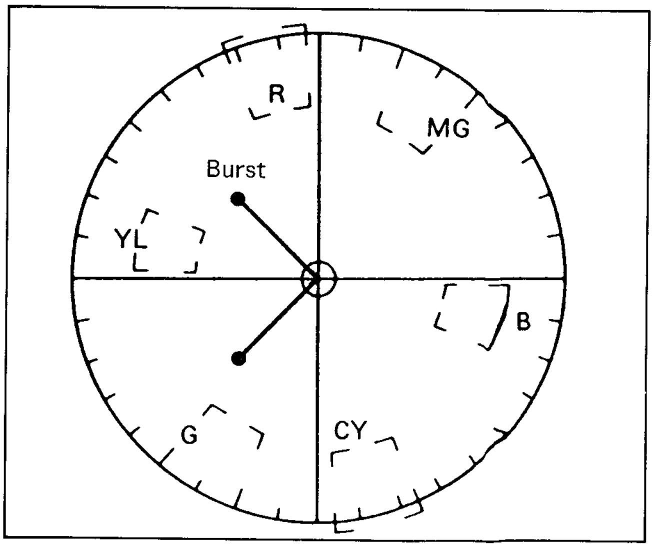

R
MG
Burst
YL
B
G
CY

Fig. V3−1.

6. BURST LEVEL ADJUSTMENT

Purpose:
Set the optimum Burst Level.

Symptom of Misadjustment:
Chroma gain will be shifted.

TP	ADJ.	MODE	INPUT
VIDEO OUT (TP3005)	VR8006	STOP	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
	OSCILLO-SCOPE	REFER TO Fig.V7 BURST=300+−30mVp-p	

1. Close the lens.
2. Connect the Video output to oscilloscope.
3. Adjust the VR8006 so that burst level becomes 300+–30mVp–p.

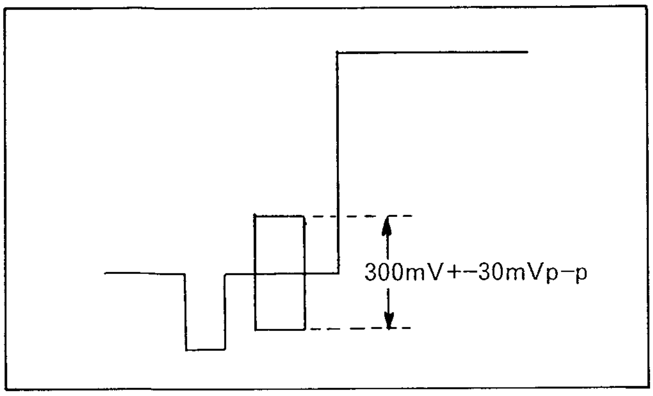


Fig. V4

7. VCO FREE RUN ADJUSTMENT

Purpose:
To adjust the Frequency of VCO to 613KHz.

Symptom of Misadjustment:
The chroma signal will not be turned properly resulting in color loss.

TP	ADJ.	MODE	INPUT
TL8003	VR8008	STOP	
TAPE	**M. EQ.**	**SPEC.**	
	FREQ. COUNTER	613±7.5kHz	

1. Connect the jumper wire between CP8001 and TL8001 and TL8301.
2. Connect the frequency counter to TL8003.
3. Adjust the VR8006 so that frequency become 613+–7.5KHz.

8. R–Y and B–Y CLAMP ADJUSTMENT

Purpose:
Set chroma signal black and white level.

Symptom of Misadjustment:
With a large shift, colour is added to Black and white areas in the picture.

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR8011 VR8012	STOP	
TAPE	**M. EQ.**	**SPEC.**	
	OSCILLO-SCOPE OR VECTOR-SCOPE	VECTOR COMES CENTER	

1. Push the Fade button. (Fade condition)
2. Connect the Video output to Vectorscope (or oscilloscope).
3. Adjust the VR8011 and VR8012 so that the waveform become minimized as shown in FiG. V5. or so that Vector comes to center as shown in Fig. V6.

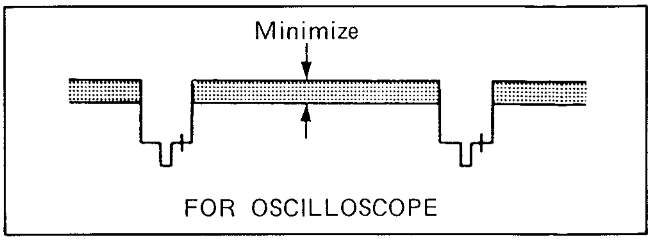


Fig. V5

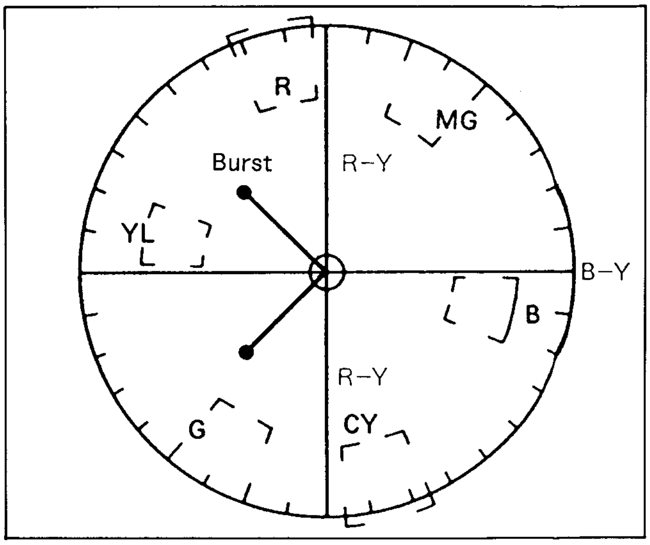


Fig. V6

9. YNR ADJUSTMENT

Purpose:
Improve the overall S/N Ratio especially in the Low Frequency–quinsy component.

Symptom of Misadjustment:
The S/N Ratio will be lower.

TP	ADJ.	MODE	INPUT
TL3003	VR3002	SELF RECORDING	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE	SIGNAL IS MINIMIZED (LESS THAN 100mV)	

1. Aim the camera at colour bar chart.
2. Record it with SP mode.
3. Connect the oscilloscope to TL3003.
4. Play back just recorded portion.
5. Adjust VR3002 so that signal is minimized.

10. RECORDING CURRENT ADJUSTMENT

REC CHROMA LEVEL ADJUSTMENT

Purpose:
Set the optimum Record Chroma Level.

Symptom of Misadjustment:
If the Record Chroma Level is too high, Beats may be seen in the picture. If the Level is

TP	ADJ.	MODE	INPUT
TP5001 (HOT) TP5002 (GND)	VR8010	REC/PLAY (SP)	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
S-VHS BLANK TAPE	OSCILLO-SCOPE	11+−2mVp−p	

1. Connect the oscilloscope to TP5001(HOT) and TP5002(GND).
2. Aim the camera at colour bar.
3. Make recording with SP mode.
4. Eliminate luminance signal by turning VR3001.
5. Adjust the VR8001 so that chroma level become 11+−2mVp−p.

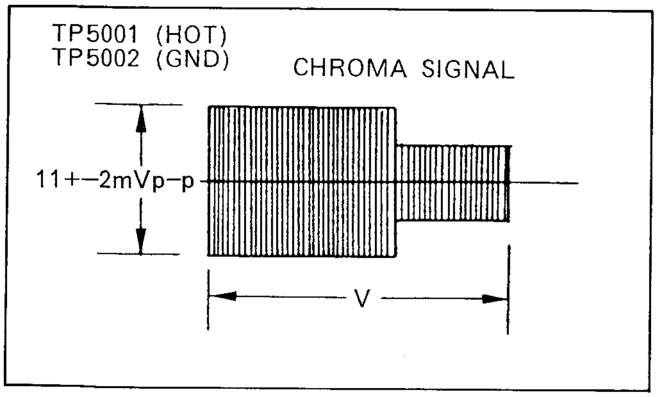


Fig. V7

11. LUMINANCE RECORDING CURRENT ADJUSTMENT

Purpose:
Set the optimum Recording Luminance Level.

Symptom of Misadjustment:
If the Record Luminance Level is too high, Video may overload.
If the Level is too Low, the S/N Ratio deteriorates.

TP	ADJ.	MODE	INPUT
TP5001 (HOT) TP5002 (GND)	VR3104	REC/PLAY (SP)	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE	110+−5mVp−p	

1. Connect the oscilloscope to TP5001 (HOT) and TP5002 (GND).
2. Aim the camera at colour bar.
3. Make recording with SP mode.
4. Adjust the VR3104 so that luminance level becomes 110+−5mVp−p.

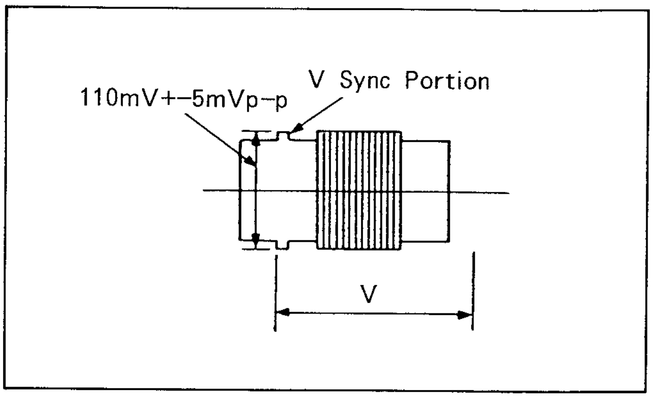


Fig. V8

12. HEAD AMP FREQUENCY RESPONSE ADJUSTMENT

Purpose:
To improve Video Frequency Response Level.

Symptom of Misadjustment:
Video Frequency Response will be deteriorated. Picture will be noisy.

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR3102	SELF RECORDING (SP)	VIDEO SWEEP SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	VIDEO SWEEP/ OSCILLO-SCOPE	A=0dB+−1dB (89∼112%)	

Note:
Edit switch must be off.

1. Set the sweep generator output as shown below.

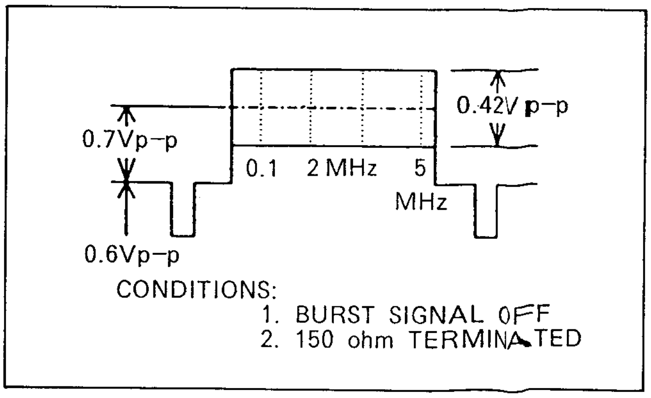


Fig. V9

1. Connect the jumper wire between CP8001(centre of VR8010) and CP8006(IC8001−32).
2. Supply sweep signal to TP3001.
3. Record it for a while.
4. Play back just recorded portion.
5. Adjust VR3102 so that level at 2MHz is within spec. as shown below.

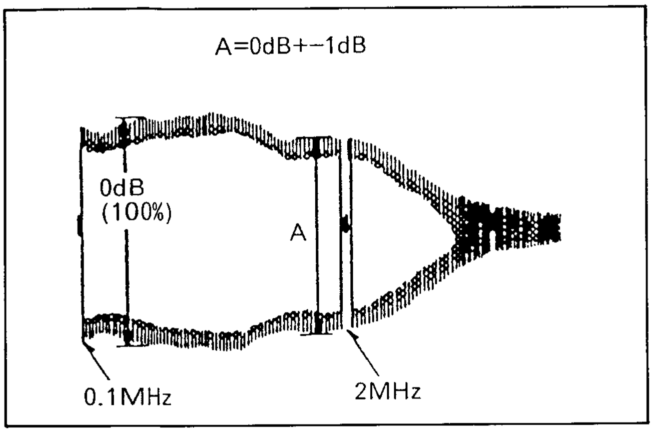


Fig. V10

13. 4.43MHz ADJUSTMENT

Purpose:
Set the frequency of oscillation.

Symptom of Misadjustment:
Colour will be changed or no colour.

TP	ADJ.	MODE	INPUT
TL8002	C8058		COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	FREQ. COUNTER	4.43361875MHz ± 15Hz	

1. Aim the camera at colour bar.
2. Record it for a while.
3. Play back just recorded portion.
4. Adjust C8058 so the reading of frequency counter is 4.43361875MHz+−15Hz.

14. BM CARRIER LEAK ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR8007	SELF RECORDING	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE TV MONITOR	CROSS MODULATION INTER FERENCE IS MINIMIZED	

1. Aim the camera at White chart.
2. Press the Memory Bottom (keep the button pressed for more than half Second).
After that, Press the Title colour / colour Reverse selector so that only blue appeared on TV Screen.
3. Adjust the VR8007 so that cross Modulation Interference is minimized on TV screen.

AUDIO SECTION

15. AUDIO BIAS CURRENT ADJUSTMENT

Purpose:
Optimize the Audio Record Bias.

Symptom of Misadjustment:
If the Bias is too low, High Frequencies are increased resulting in distortion. If the Bias is too high, High Frequencies are attenuated.

TP	ADJ.	MODE	INPUT
TL4001(HOT) TL4002(GND)	VR4002	REC/PLAY	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	2.7mVrms ± 0.1mVrms	

16. AUDIO PLAYBACK LEVEL ADJUSTMENT

Purpose:
To align the playback level of Audio signal with the recording (E−E) Level.

Symptom of Misadjustment:
If the playback Level is too low, Audio output level is attenuated. If the playback level is too high, Audio output level is inadequate.

TP	ADJ.	MODE	INPUT
LINE OUT	VR4001	SELF RECORDING	1kHz AUDIO −60dBV SIGNAL / VIDEO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	SIGNAL GENERA-TOR/D.V.M.	EE LEVEL = −8.0±2dB PB LEVEL = EE LEVEL = ±05 dB	

1. Supply the audio signal (1KHz/−60dB sine−wave) to audio circuit through the MIC Input Jack.
2. Adjust the VR4001 so that the Playback level become −8dB+−0.5dB.

SYSTEM CONTROL SECTION

17. CHARACTER POSITION ADJUSTMENT

Purpose:
Optimize the character position.

Symptom of Misadjustment:
Character position is changed from center.

TP	ADJ.	MODE	INPUT
VIEW FINDER	C6102	STOP	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
	VIEW FINDER		

1. Connect the EVF unit to the VTR unit.
2. Aim the Camera to colour bars chart.
3. Adjust the C6102 so that the character Position is shown below.

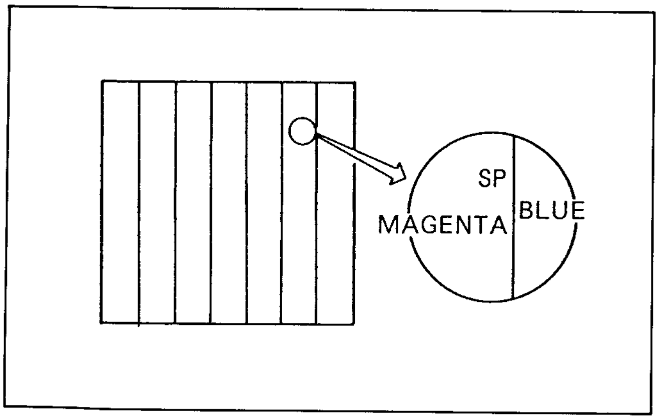


Fig. V11

18. UNDER CUT ADJUSTMENT

Purpose:
To determine the overdischarge detection level.

Symptom of Misadjustment:
When the overdischarge detection level is set below 5.50V+0.05V,−0.025V, the battery service life will deteriorate.
If the voltage is adjusted higher than 5.5V DC, the usable time per charge is shortened.

TP	ADJ.	MODE	INPUT
TP6004	VR6001	REC/PLAY	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE/ DC POWER SUPPLY/ D.V.M.		

Note:
Do not connect AC Adaptor, connect a DC Power Supply to the Battery terminal (+),(−) then Supply the Voltage 5.50+0.05V,−0.025V.

1. Turn VR6001 unit pulse train becomes nothing, (When just pulse train is nothing, stop it.)

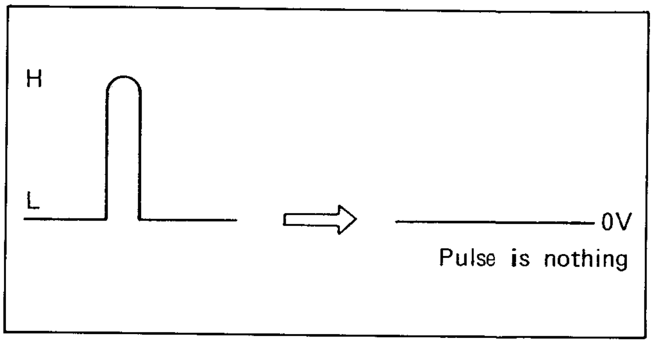


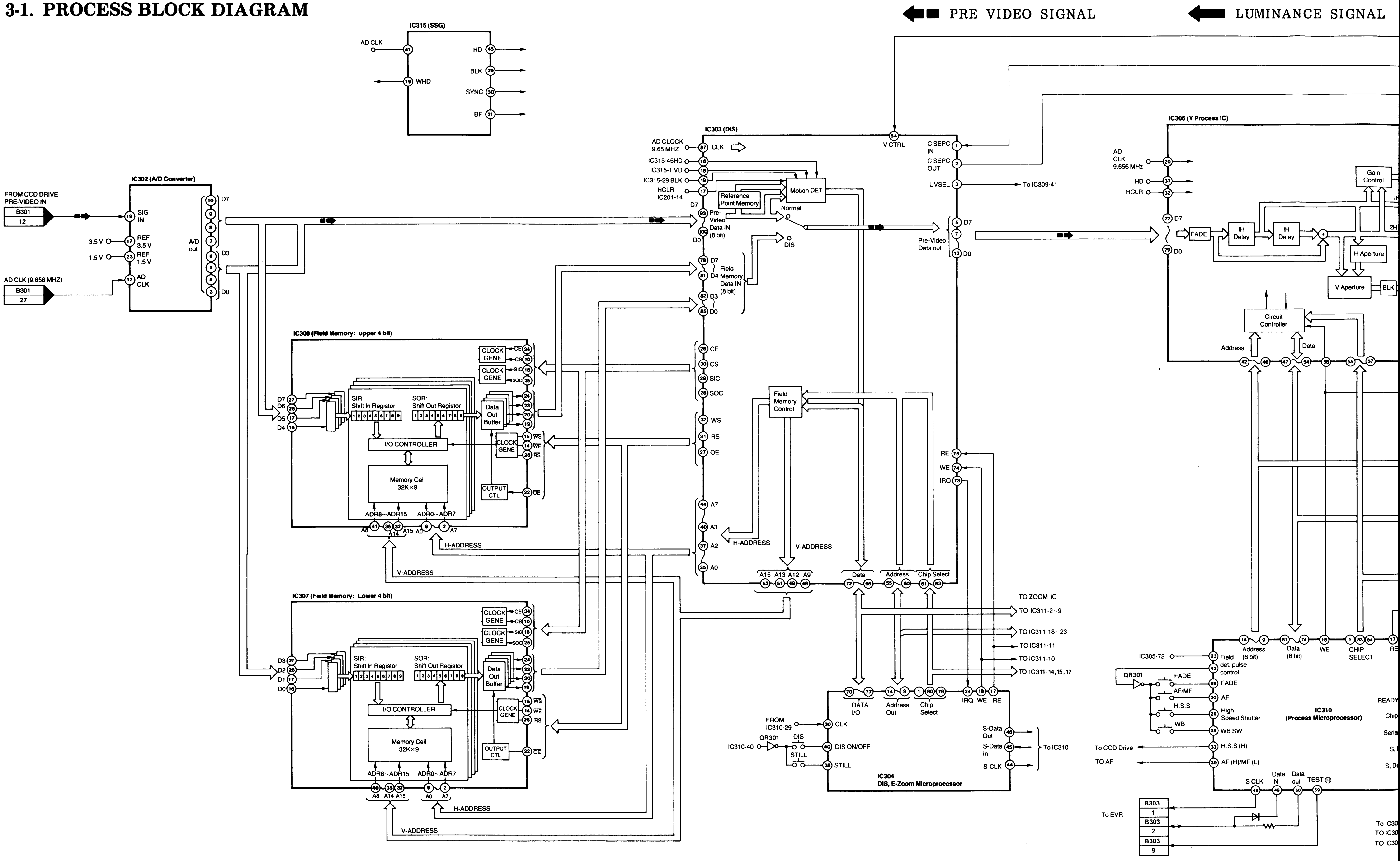
Fig. V12

19. DISPLAY MICROPROCESSOR FREQ. ADJUSTMENT

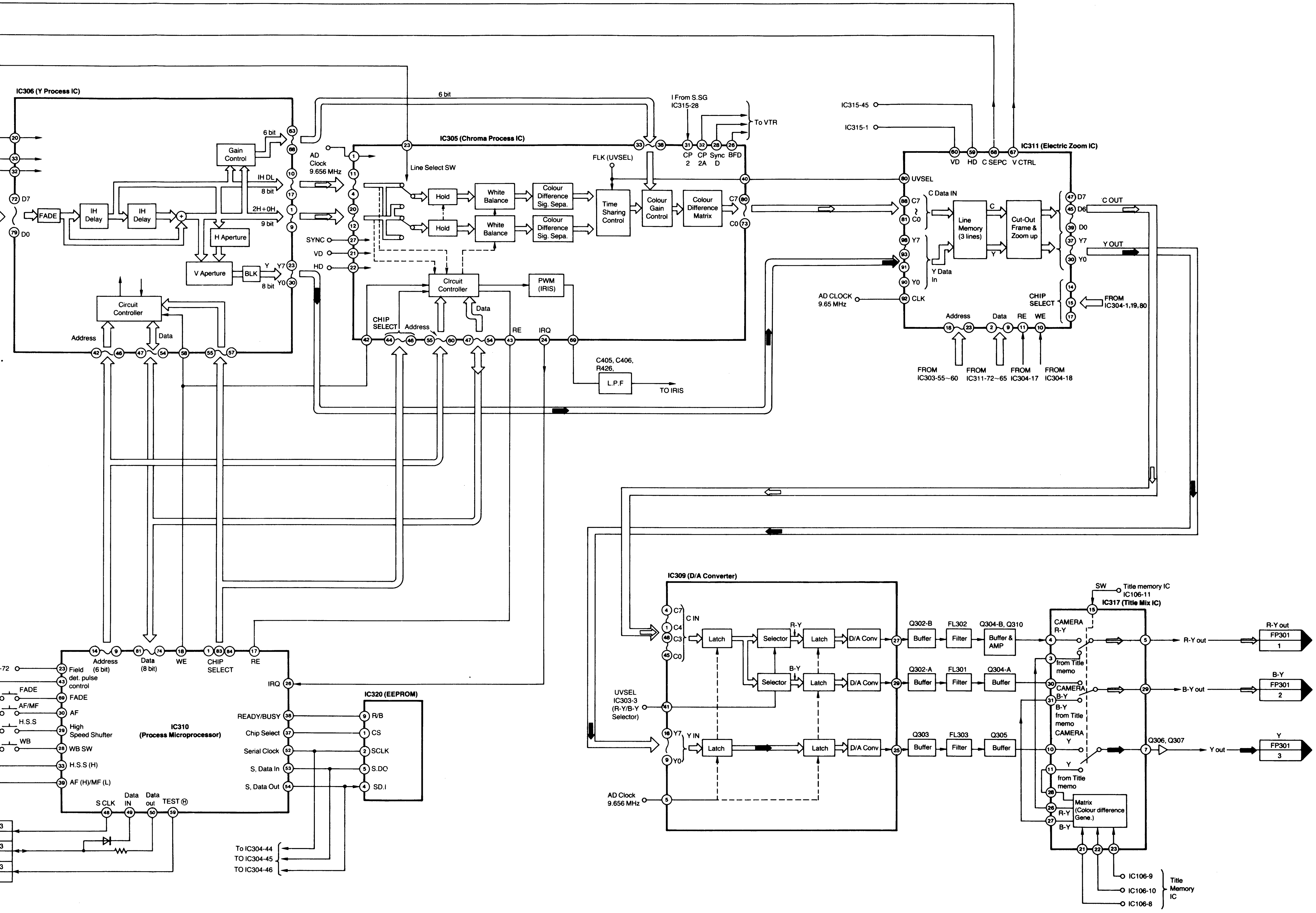
TP	ADJ.	MODE	INPUT
TL6101	C6108	STOP	
TAPE	**M. EQ.**	**SPEC.**	
	FREQ. COUNTER	1953125+−3.9nsec	

1. Connect the jumper wire between TL6101 and GND.
2. Adjust the C6108 so the reading of frequency counter is 1953125+−3.9nsec.

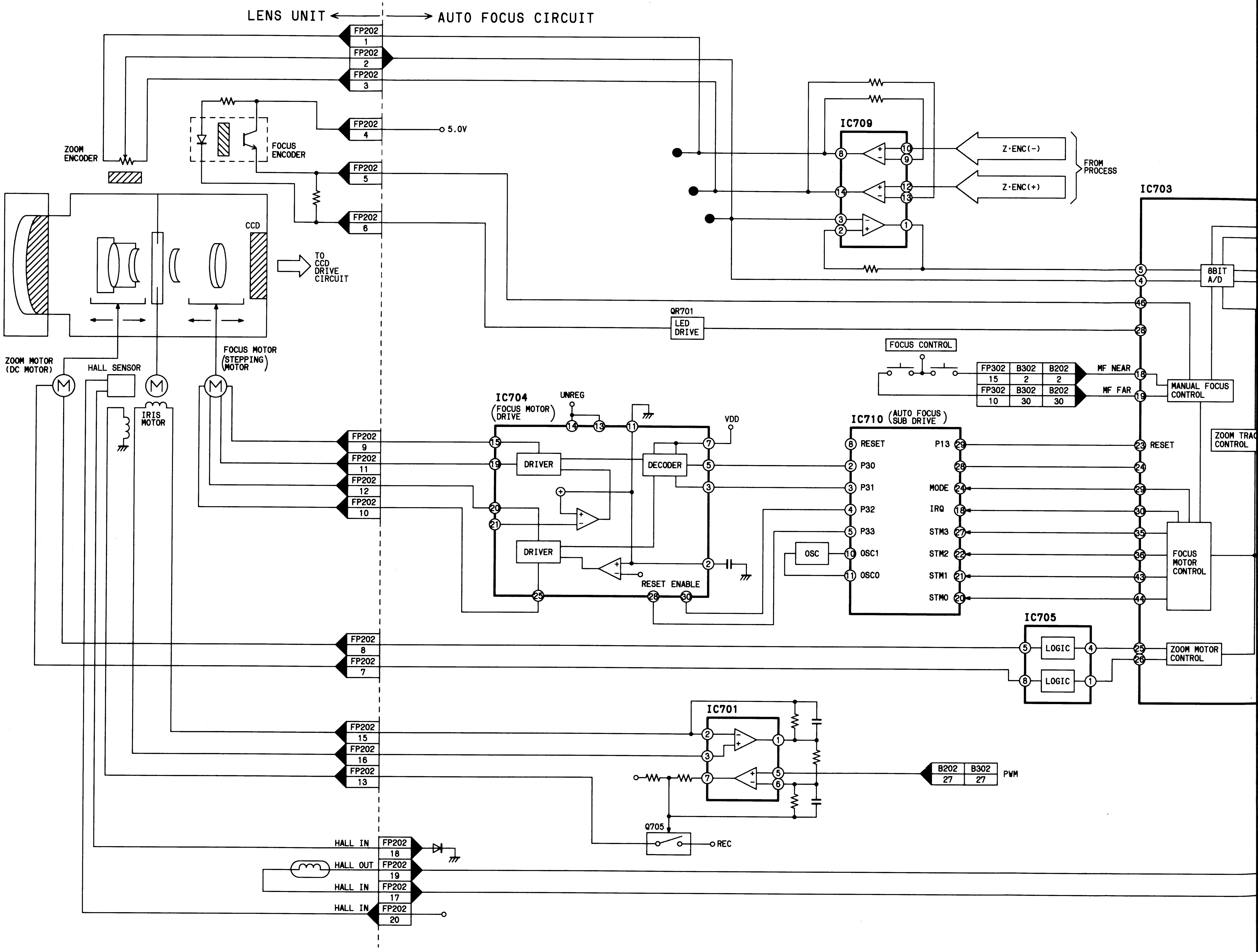
SECTION 3
BLOCK DIAGRAMS & SCHEMATIC DIAGRAMS
3-1. PROCESS BLOCK DIAGRAM


PRE VIDEO SIGNAL
LUMINANCE SIGNAL
IC315 (SSG)
AD CLK
HD
BLK
SYNC
BF
WHD
IC302 (A/D Converter)
FROM CCD DRIVE
PRE-VIDEO IN
B301
12
SIG IN
REF 3.5 V
REF 1.5 V
AD CLK
3.5 V
1.5 V
AD CLK (9.656 MHZ)
B301
27
A/D out
D7
D3
D0
IC303 (DIS)
AD CLOCK 9.65 MHZ
CLK
IC315-45HD
IC315-1 VD
IC315-29 BLK
HCLR IC201-14
Reference Point Memory
Motion DET
Normal
DIS
Pre-Video Data IN (8 bit)
Field Memory Data IN (8 bit)
V CTRL
C SEPC IN
C SEPC OUT
UVSEL
To IC309-41
Pre-Video Data out
CE
CS
SIC
SOC
WS
RS
OE
A7
A3
A2
A0
H-ADDRESS
V-ADDRESS
Field Memory Control
RE
WE
IRQ
A15 A13 A12 A9
Data
Address
Chip Select
IC306 (Field Memory: upper 4 bit)
IC307 (Field Memory: Lower 4 bit)
CLOCK GENE
SIR: Shift In Register
SOR: Shift Out Register
Data Out Buffer
I/O CONTROLLER
Memory Cell 32K×9
OUTPUT CTL
ADR8~ADR15
ADR0~ADR7
A8 A14 A15 A0 A7
TO ZOOM IC
TO IC311-2~9
TO IC311-18~23
TO IC311-11
TO IC311-10
TO IC311-14,15,17
IC304
DIS, E-Zoom Microprocessor
DATA I/O
Address Out
Chip Select
IRQ WE RE
CLK
DIS ON/OFF
STILL
FROM IC310-29
IC310-40
QR301
DIS
STILL
S-Data Out
S-Data In
S-CLK
To IC310
IC306 (Y Process IC)
AD CLK 9.656 MHz
HD
HCLR
FADE
IH Delay
IH Delay
Gain Control
H Aperture
V Aperture
BLK
Circuit Controller
Address
Data
IC305-72
QR301
Field det. pulse control
FADE
AF/MF
H.S.S
WB
AF
High Speed Shufter
WB SW
H.S.S (H)
AF (H)/MF (L)
To CCD Drive
TO AF
IC310
(Process Microprocessor)
Address (6 bit)
Data (8 bit)
WE
CHIP SELECT
S CLK
Data IN
Data out
TEST Ⓗ
To EVR
B303
1
B303
2
B303
9

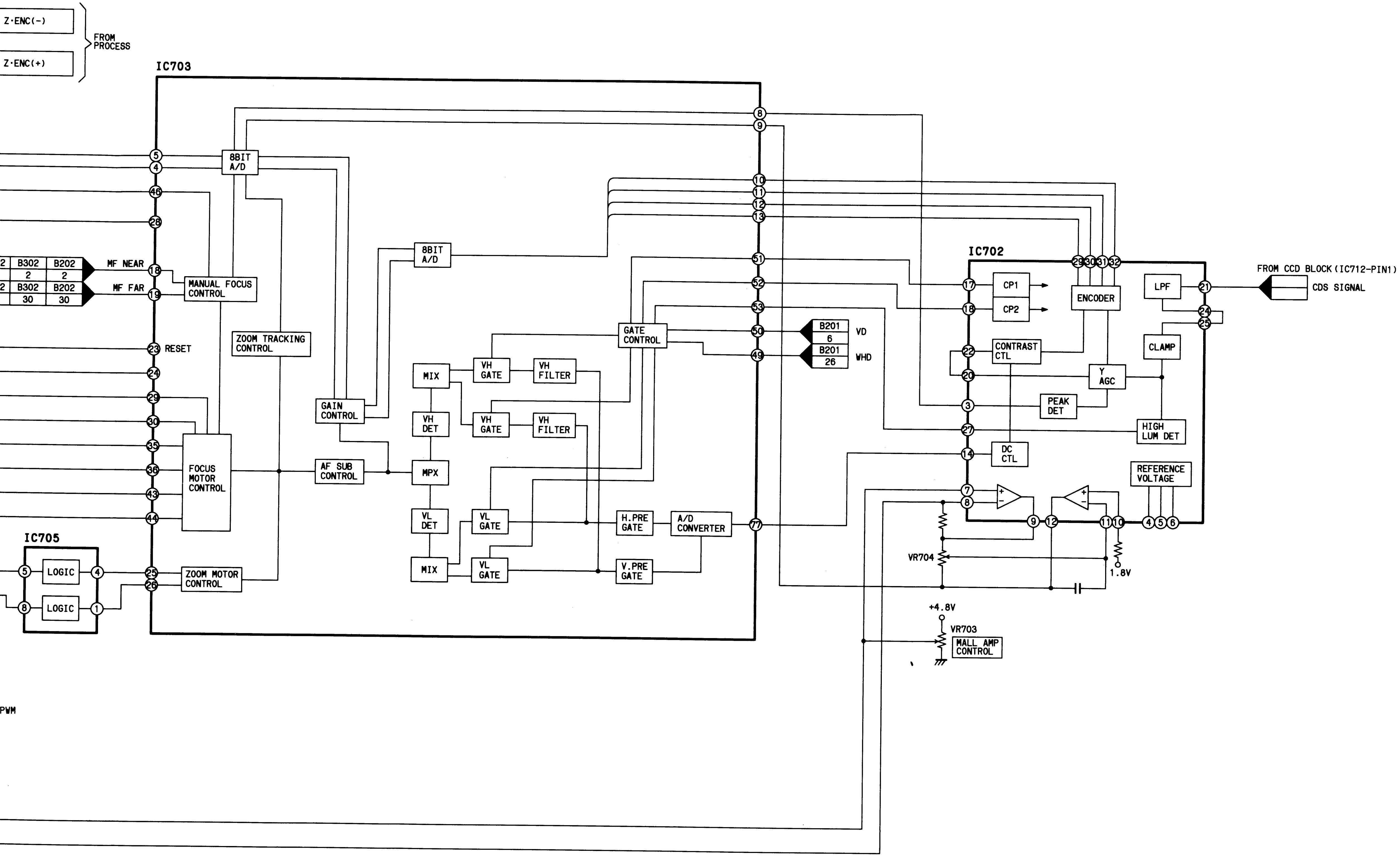
◀ LUMINANCE SIGNAL ◁ CHROMINANCE SIGNAL


IC306 (Y Process IC)
FADE
IH Delay
IH Delay
Gain Control
6 bit
IH DL
8 bit
2H+0H
9 bit
H Aperture
V Aperture
BLK
Y
Y7
Y0
8 bit
D7
D0
Circuit Controller
Address
Data
6 bit
AD Clock 9.656 MHz
IC305 (Chroma Process IC)
Line Select SW
Hold
Hold
White Balance
White Balance
Colour Difference Sig. Sepa.
Colour Difference Sig. Sepa.
Time Sharing Control
Colour Gain Control
Colour Difference Matrix
FLK (UVSEL)
I From S.SG IC315-28
To VTR
CP 2
CP 2A
Sync D
BFD
C7
C0
SYNC
VD
HD
Circuit Controller
PWM (IRIS)
Data
CHIP SELECT
Address
RE
IRQ
C405, C406, R426,
L.P.F
TO IRIS
IC315-45
IC315-1
IC311 (Electric Zoom IC)
VD
HD
C SEPC
V CTRL
UVSEL
C Data IN
C7
C0
Y7
Y0
Y Data In
CLK
AD CLOCK 9.65 MHz
Line Memory (3 lines)
C
Y
Cut-Out Frame & Zoom up
D7
D6
D0
Y7
Y0
C OUT
Y OUT
CHIP SELECT
FROM IC304-1,19,80
Address
Data
RE
WE
FROM IC303-55~60
FROM IC311-72~65
FROM IC304-17
FROM IC304-18
-72
FADE
AF/MF
H.S.S
WB
Address (6 bit)
Data (8 bit)
WE
CHIP SELECT
RE
Field det. pulse control
FADE
AF
High Speed Shufter
WB SW
H.S.S (H)
AF (H)/MF (L)
IC310 (Process Microprocessor)
IRQ
READY/BUSY
Chip Select
Serial Clock
S. Data In
S, Data Out
S CLK
Data IN
Data out
TEST Ⓗ
IC320 (EEPROM)
R/B
CS
SCLK
S.DO
SD.I
To IC304-44
TO IC304-45
TO IC304-46
IC309 (D/A Converter)
C7
C4
C3
C0
C IN
Latch
Selector
R-Y
Latch
D/A Conv
Selector
B-Y
Latch
D/A Conv
UVSEL IC303-3 (R-Y/B-Y Selector)
Y7
Y0
Y IN
Latch
Latch
D/A Conv
AD Clock 9.656 MHz
Q302-B
Buffer
FL302
Filter
Q304-B, Q310
Buffer & AMP
Q302-A
Buffer
FL301
Filter
Q304-A
Buffer
Q303
Buffer
FL303
Filter
Q305
Buffer
SW
Title memory IC IC106-11
IC317 (Title Mix IC)
CAMERA R-Y
from Title memo
CAMERA B-Y
B-Y from Title memo
CAMERA Y
Y
from Title memo
Matrix (Colour difference Gene.)
R-Y
B-Y
Q306, Q307
R-Y out
B-Y out
Y out
R-Y out
FP301 1
B-Y
FP301 2
Y
FP301 3
IC106-9
IC106-10
IC106-8
Title Memory IC

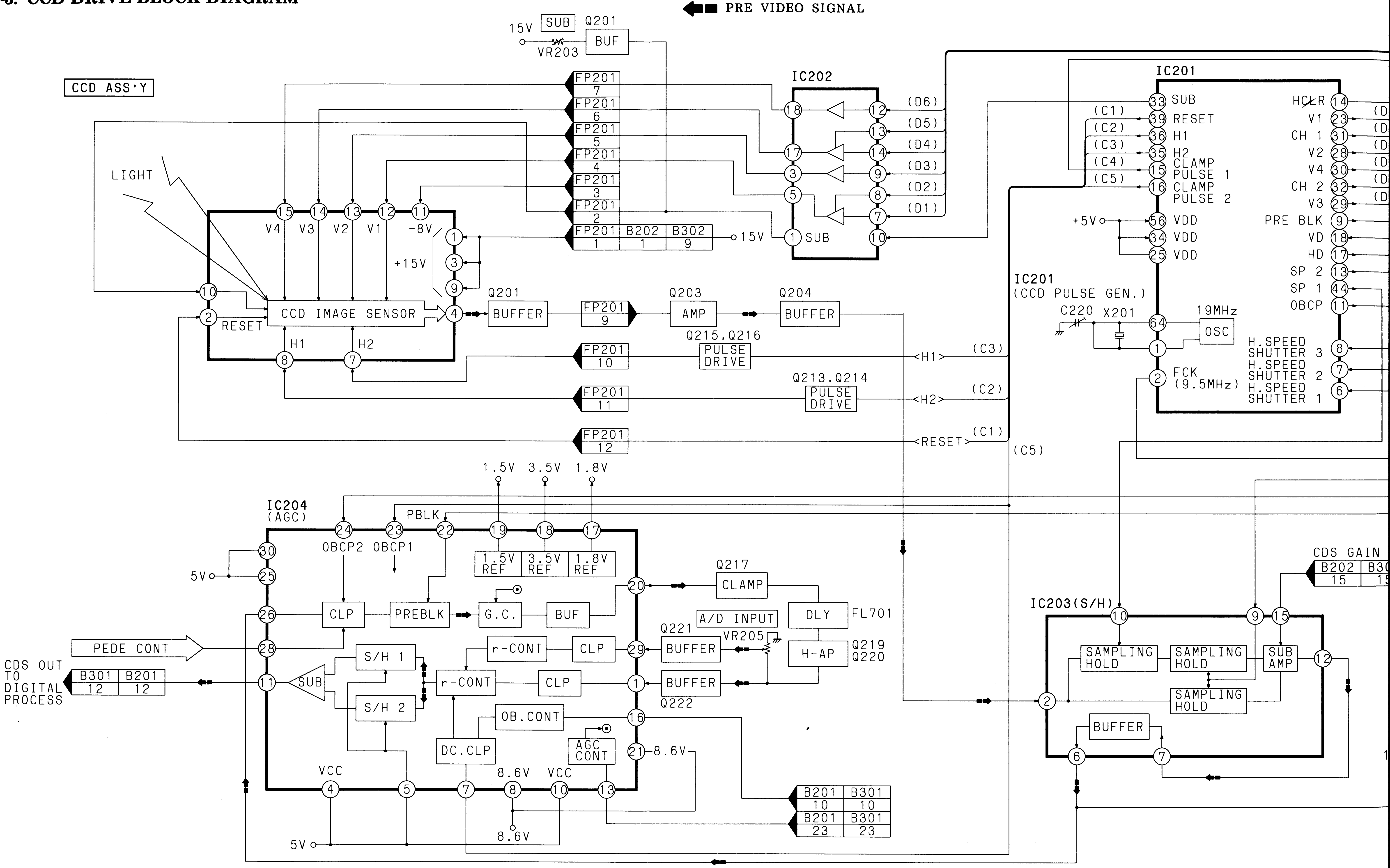
3-2. AUTO FOCUS BLOCK DIAGRAM

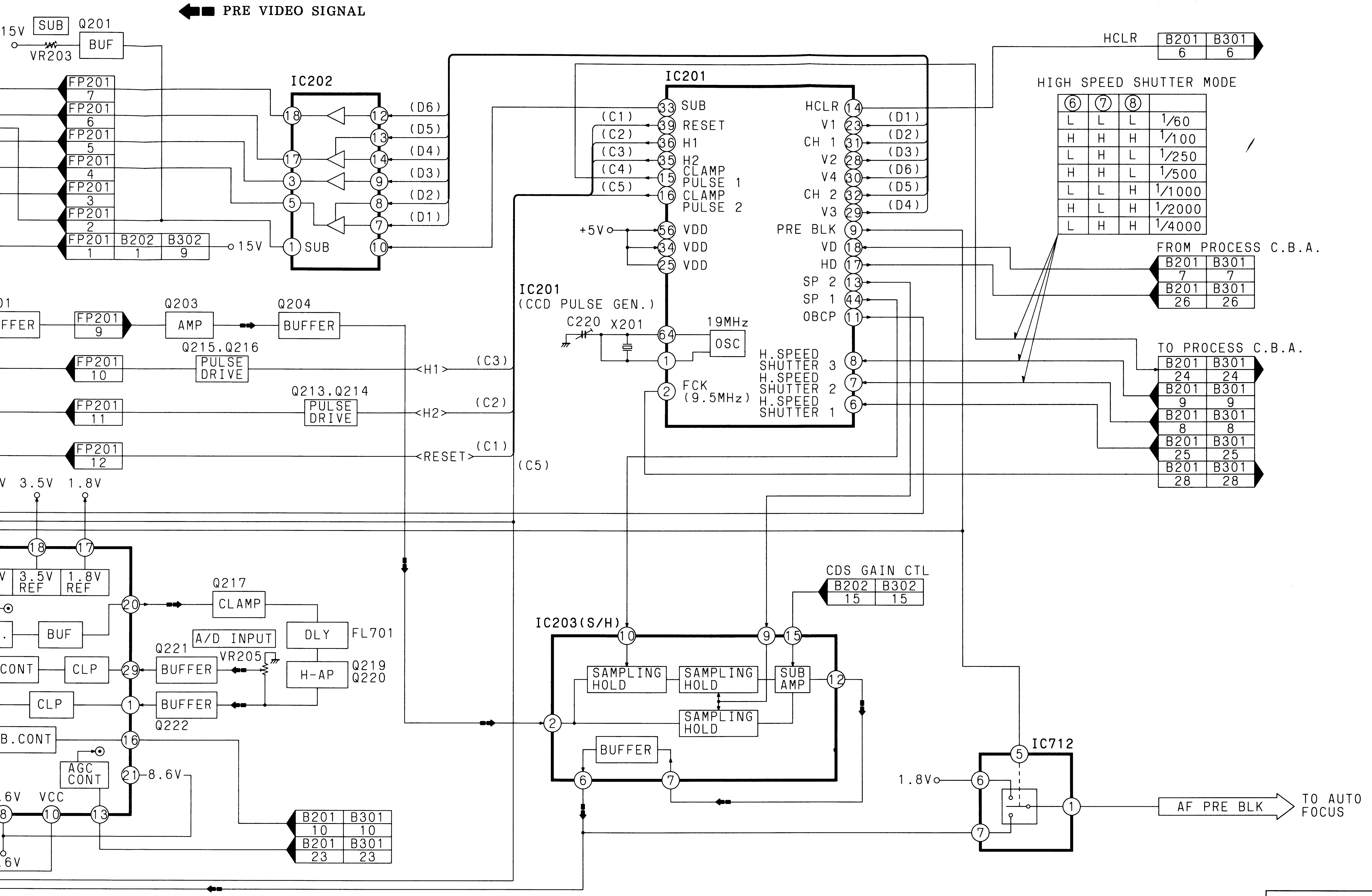

LENS UNIT
AUTO FOCUS CIRCUIT
FP202 1
FP202 2
FP202 3
FP202 4
FP202 5
FP202 6
5.0V
ZOOM ENCODER
FOCUS ENCODER
CCD
TO CCD DRIVE CIRCUIT
ZOOM MOTOR (DC MOTOR)
HALL SENSOR
IRIS MOTOR
FOCUS MOTOR (STEPPING MOTOR)
IC709
Z·ENC(−)
Z·ENC(+)
FROM PROCESS
IC703
8BIT A/D
QR701 LED DRIVE
FOCUS CONTROL
FP302 15
B302 2
B202 2
FP302 10
B302 30
B202 30
MF NEAR
MF FAR
MANUAL FOCUS CONTROL
IC704 (FOCUS MOTOR DRIVE)
UNREG
VDD
DRIVER
DECODER
RESET ENABLE
FP202 9
FP202 11
FP202 12
FP202 10
IC710 (AUTO FOCUS SUB DRIVE)
RESET
P30
P31
P32
P33
OSC
OSC1
OSCO
P13
MODE
IRQ
STM3
STM2
STM1
STM0
RESET
ZOOM TRAC CONTROL
FOCUS MOTOR CONTROL
IC705
LOGIC
LOGIC
ZOOM MOTOR CONTROL
FP202 8
FP202 7
IC701
FP202 15
FP202 16
FP202 13
B202 27
B302 27
PWM
Q705
REC
HALL IN FP202 18
HALL OUT FP202 19
HALL IN FP202 17
HALL IN FP202 20

Back Page:
PROCESS Section


Z·ENC(−)
Z·ENC(+)
FROM PROCESS
IC703
8BIT A/D
MANUAL FOCUS CONTROL
ZOOM TRACKING CONTROL
GAIN CONTROL
8BIT A/D
AF SUB CONTROL
FOCUS MOTOR CONTROL
ZOOM MOTOR CONTROL
MIX
VH DET
MPX
VL DET
MIX
VH GATE
VH FILTER
VH GATE
VH FILTER
VL GATE
VL GATE
GATE CONTROL
H.PRE GATE
V.PRE GATE
A/D CONVERTER
B302
B202
2
30
MF NEAR
MF FAR
RESET
B201
6
26
VD
WHD
IC705
LOGIC
LOGIC
IC702
CP1
CP2
ENCODER
LPF
CONTRAST CTL
Y AGC
CLAMP
PEAK DET
HIGH LUM DET
DC CTL
REFERENCE VOLTAGE
FROM CCD BLOCK (IC712-PIN1)
CDS SIGNAL
VR704
1.8V
+4.8V
VR703
MALL AMP CONTROL
PWM

3-3. CCD DRIVE BLOCK DIAGRAM


PRE VIDEO SIGNAL
15V
SUB
Q201
BUF
VR203
CCD ASS'Y
LIGHT
FP201 7
FP201 6
FP201 5
FP201 4
FP201 3
FP201 2
FP201 1
B202 1
B302 9
15V
IC202
SUB
(D6)
(D5)
(D4)
(D3)
(D2)
(D1)
IC201
SUB
RESET
H1
H2
CLAMP PULSE 1
CLAMP PULSE 2
(C1)
(C2)
(C3)
(C4)
(C5)
+5V
VDD
VDD
VDD
HCLR
V1
CH 1
V2
V4
CH 2
V3
PRE BLK
VD
HD
SP 2
SP 1
OBCP
V4
V3
V2
V1
-8V
+15V
RESET
CCD IMAGE SENSOR
H1
H2
Q201
BUFFER
FP201 9
Q203
AMP
Q204
BUFFER
IC201 (CCD PULSE GEN.)
C220
X201
19MHz
OSC
FCK (9.5MHz)
H.SPEED SHUTTER 3
H.SPEED SHUTTER 2
H.SPEED SHUTTER 1
FP201 10
Q215.Q216
PULSE DRIVE
<H1>
(C3)
FP201 11
Q213.Q214
PULSE DRIVE
<H2>
(C2)
FP201 12
<RESET>
(C1)
(C5)
1.5V
3.5V
1.8V
IC204 (AGC)
PBLK
OBCP2
OBCP1
1.5V REF
3.5V REF
1.8V REF
5V
CLP
PREBLK
G.C.
BUF
Q217
CLAMP
DLY
FL701
A/D INPUT
Q221
VR205
BUFFER
H-AP
Q219
Q220
PEDE CONT
CDS OUT TO DIGITAL PROCESS
B301 12
B201 12
SUB
S/H 1
S/H 2
r-CONT
CLP
r-CONT
CLP
BUFFER
Q222
OB.CONT
DC.CLP
AGC CONT
8.6V
VCC
8.6V
VCC
5V
8.6V
B201 10
B301 10
B201 23
B301 23
CDS GAIN
B202 15
IC203(S/H)
SAMPLING HOLD
SAMPLING HOLD
SUB AMP
SAMPLING HOLD
BUFFER

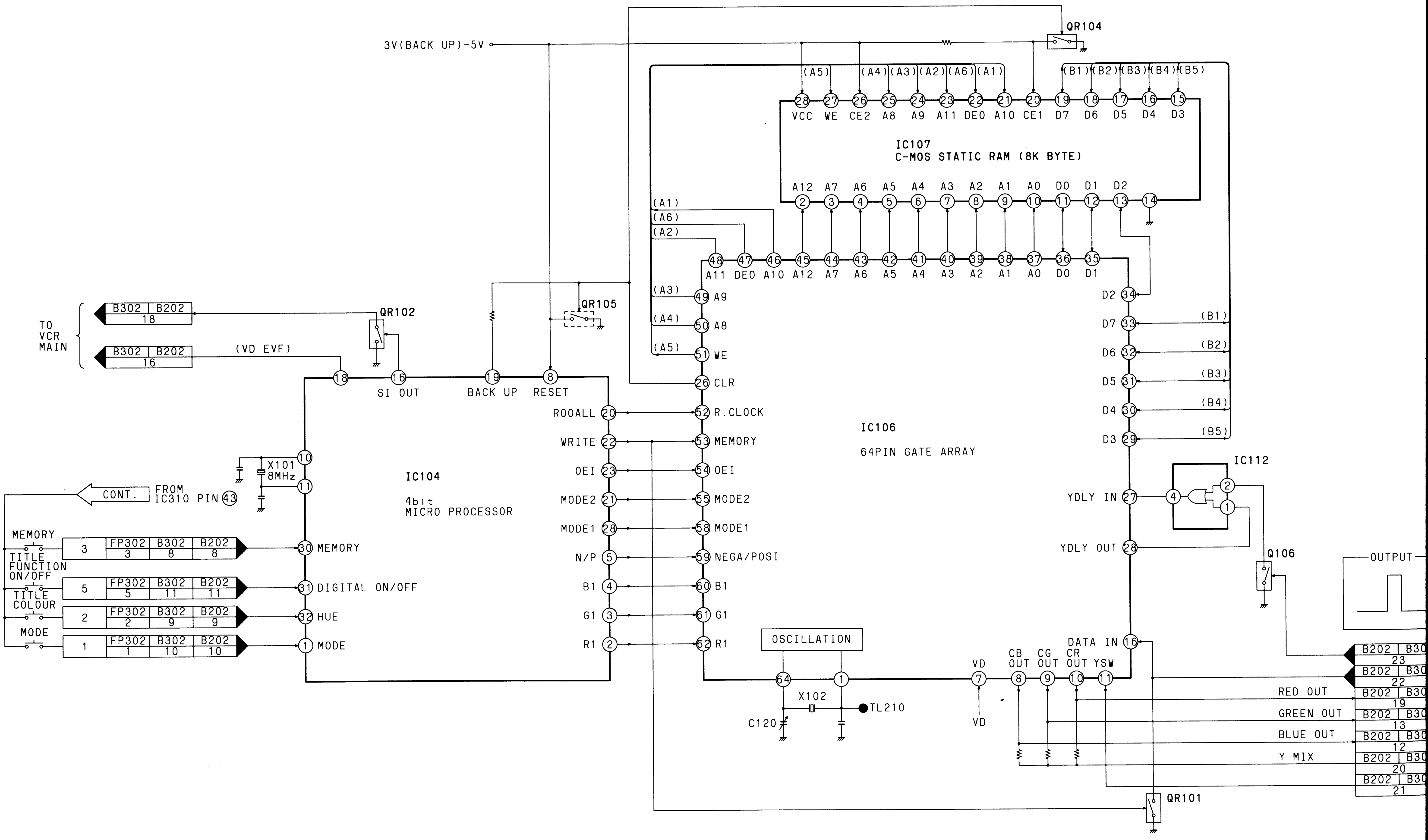

PRE VIDEO SIGNAL
15V
SUB
Q201
BUF
VR203
IC202
FP201 7
FP201 6
FP201 5
FP201 4
FP201 3
FP201 2
FP201 1
B202 1
B302 9
15V
SUB
(D6)
(D5)
(D4)
(D3)
(D2)
(D1)
IC201
(C1)
(C2)
(C3)
(C4)
(C5)
SUB
RESET
H1
H2
CLAMP PULSE 1
CLAMP PULSE 2
+5V
VDD
HCLR
V1
CH 1
V2
V4
CH 2
V3
PRE BLK
VD
HD
SP 2
SP 1
OBCP
H.SPEED SHUTTER 3
H.SPEED SHUTTER 2
H.SPEED SHUTTER 1
IC201 (CCD PULSE GEN.)
C220
X201
19MHz
OSC
FCK (9.5MHz)
HCLR
B201 6
B301 6
FROM PROCESS C.B.A.
B201 7
B301 7
B201 26
B301 26
TO PROCESS C.B.A.
B201 24
B301 24
B201 9
B301 9
B201 8
B301 8
B201 25
B301 25
B201 28
B301 28
Q203
AMP
Q204
BUFFER
FFER
FP201 9
Q215.Q216
PULSE DRIVE
FP201 10
<H1>
(C3)
Q213.Q214
PULSE DRIVE
FP201 11
<H2>
(C2)
FP201 12
<RESET>
(C1)
(C5)
3.5V
1.8V
3.5V REF
1.8V REF
Q217
CLAMP
DLY
FL701
BUF
A/D INPUT
Q221
VR205
CONT
CLP
BUFFER
H-AP
Q219
Q220
CLP
BUFFER
Q222
B.CONT
AGC CONT
8.6V
VCC
.6V
B201 10
B301 10
B201 23
B301 23
CDS GAIN CTL
B202 15
B302 15
IC203(S/H)
SAMPLING HOLD
SAMPLING HOLD
SUB AMP
SAMPLING HOLD
BUFFER
IC712
1.8V
AF PRE BLK
TO AUTO FOCUS

HIGH SPEED SHUTTER MODE

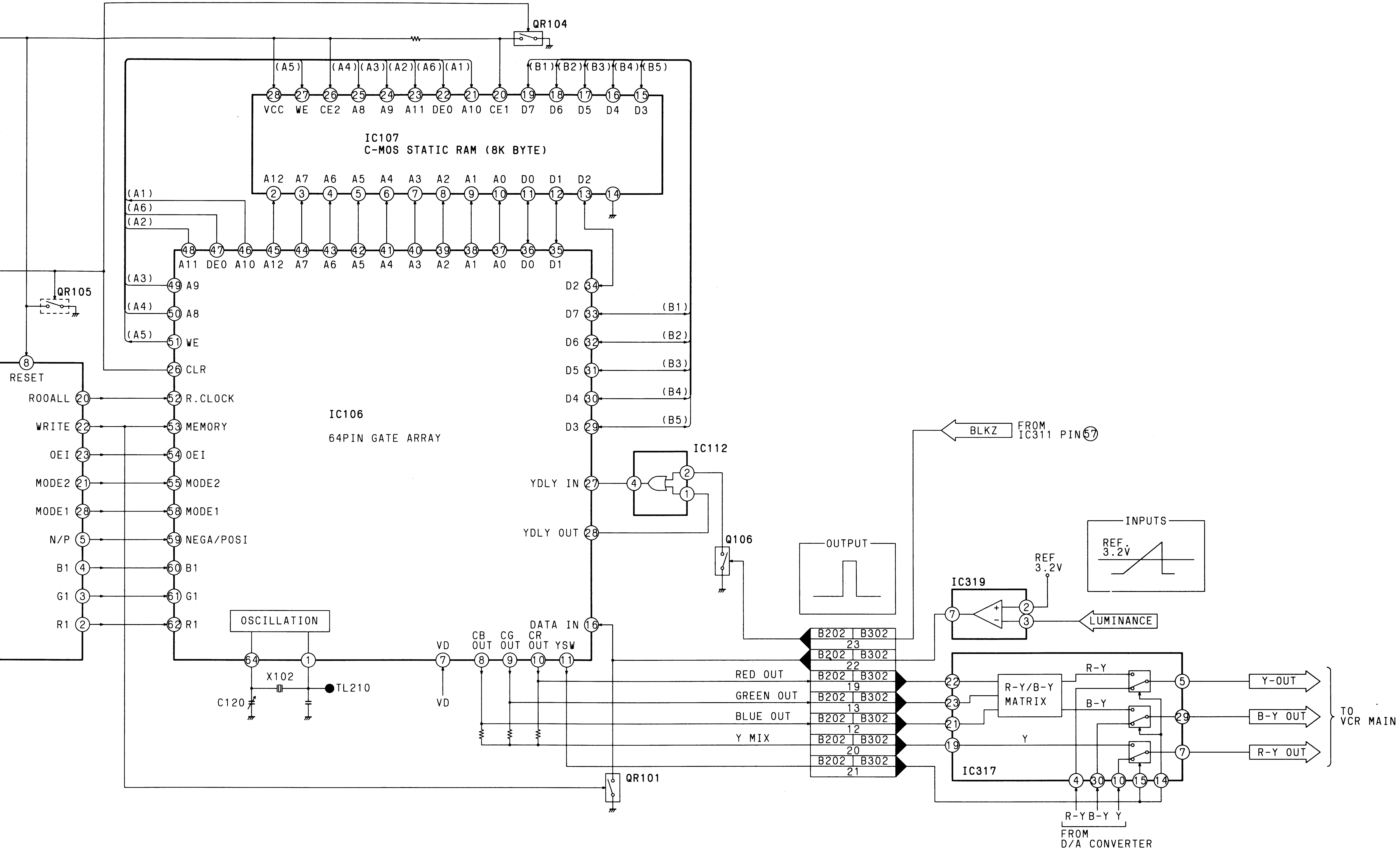
⑥	⑦	⑧	
L	L	L	1/60
H	H	H	1/100
L	H	L	1/250
H	H	L	1/500
L	L	H	1/1000
H	L	H	1/2000
L	H	H	1/4000

Next Page:
DIGITAL MEMORY Section

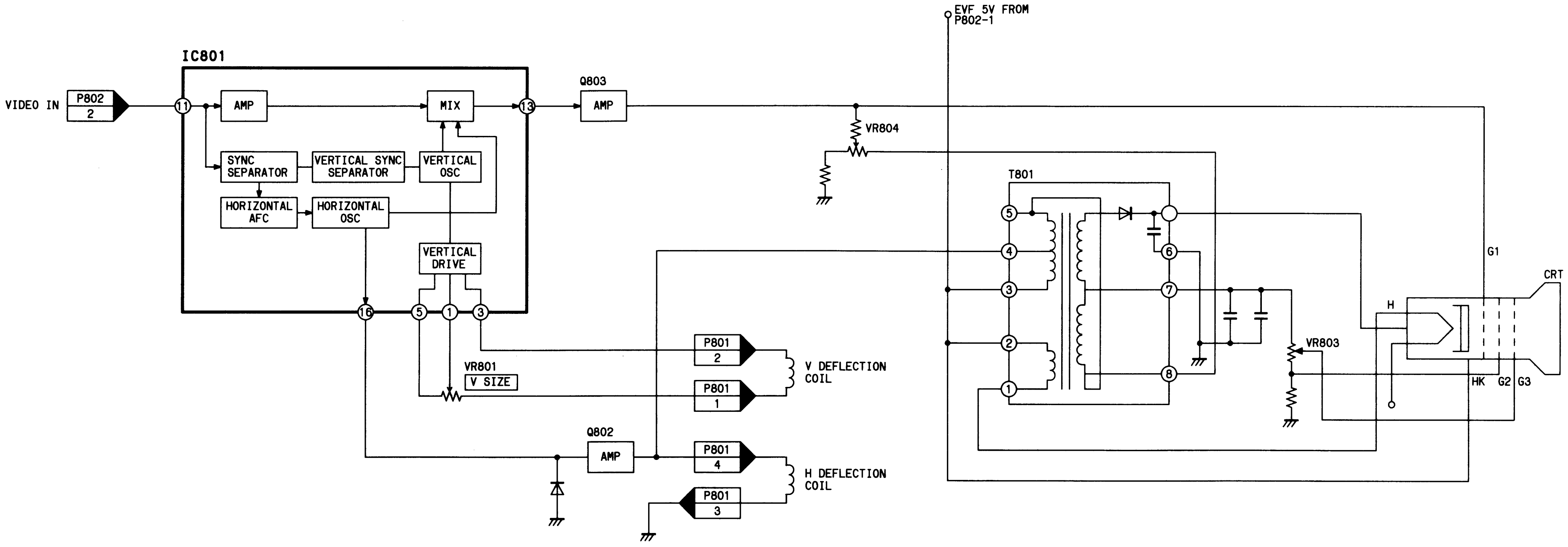
3-4. DIGITAL MEMORY BLOCK DIAGRAM



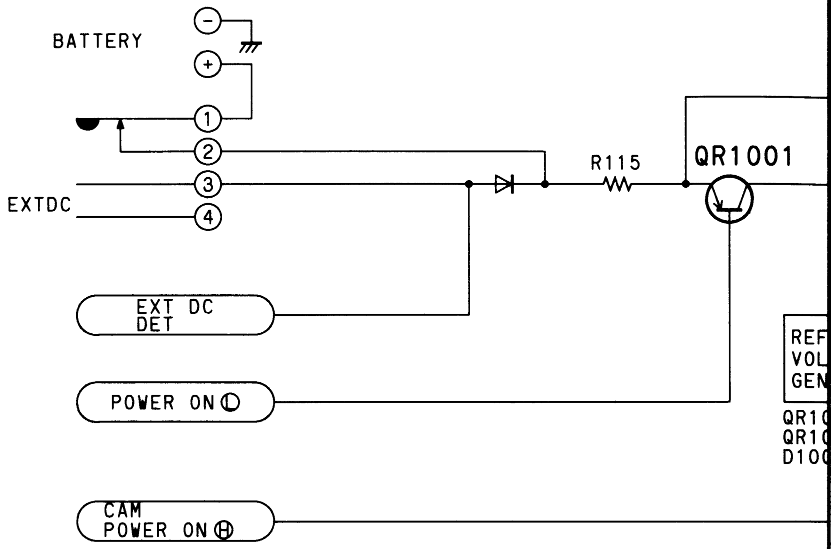
3V(BACK UP)-5V
QR104
(A5)
(A4)
(A3)
(A2)
(A6)
(A1)
(B1)
(B2)
(B3)
(B4)
(B5)
VCC
WE
CE2
A8
A9
A11
DE0
A10
CE1
D7
D6
D5
D4
D3
IC107
C-MOS STATIC RAM (8K BYTE)
A12
A7
A6
A5
A4
A3
A2
A1
A0
D0
D1
D2
A11
DE0
A10
A12
A7
A6
A5
A4
A3
A2
A1
A0
D0
D1
A9
A8
WE
CLR
R.CLOCK
MEMORY
OEI
MODE2
MODE1
NEGA/POSI
B1
G1
R1
D2
D7
D6
D5
D4
D3
YDLY IN
YDLY OUT
DATA IN
IC106
64PIN GATE ARRAY
IC112
Q106
OUTPUT
OSCILLATION
X102
C120
TL210
VD
VD
CB OUT
CG OUT
CR OUT
YSW
RED OUT
GREEN OUT
BLUE OUT
Y MIX
QR101
TO VCR MAIN
B302
B202
18
16
(VD EVF)
QR102
QR105
SI OUT
BACK UP
RESET
ROOALL
WRITE
OEI
MODE2
MODE1
N/P
B1
G1
R1
X101 8MHz
IC104
4bit MICRO PROCESSOR
CONT.
FROM IC310 PIN ㊸
MEMORY
TITLE FUNCTION ON/OFF
TITLE COLOUR
MODE
FP302
DIGITAL ON/OFF
HUE
MODE
B202 23
B202 22
B202 19
B202 13
B202 12
B202 20
B202 21


QR104
(A5)
(A4)
(A3)
(A2)
(A6)
(A1)
(B1)
(B2)
(B3)
(B4)
(B5)
VCC WE CE2 A8 A9 A11 DEO A10 CE1 D7 D6 D5 D4 D3
IC107
C-MOS STATIC RAM (8K BYTE)
A12 A7 A6 A5 A4 A3 A2 A1 A0 D0 D1 D2
A11 DEO A10 A12 A7 A6 A5 A4 A3 A2 A1 A0 D0 D1
A9
A8
WE
CLR
R.CLOCK
MEMORY
OEI
MODE2
MODE1
NEGA/POSI
B1
G1
R1
D2
D7
D6
D5
D4
D3
QR105
RESET
ROOALL
WRITE
OEI
MODE2
MODE1
N/P
B1
G1
R1
IC106
64PIN GATE ARRAY
YDLY IN
YDLY OUT
IC112
Q106
BLKZ
FROM IC311 PIN(57)
OUTPUT
INPUTS
REF. 3.2V
REF 3.2V
IC319
LUMINANCE
DATA IN
OSCILLATION
X102
TL210
C120
VD
CB OUT
CG OUT
CR OUT
YSW
VD
B202 B302 23
B202 B302 22
RED OUT
B202 B302 19
GREEN OUT
B202 B302 13
BLUE OUT
B202 B302 12
Y MIX
B202 B302 20
B202 B302 21
QR101
R-Y/B-Y MATRIX
R-Y
B-Y
Y
IC317
Y-OUT
B-Y OUT
R-Y OUT
TO VCR MAIN
R-Y B-Y Y
FROM D/A CONVERTER

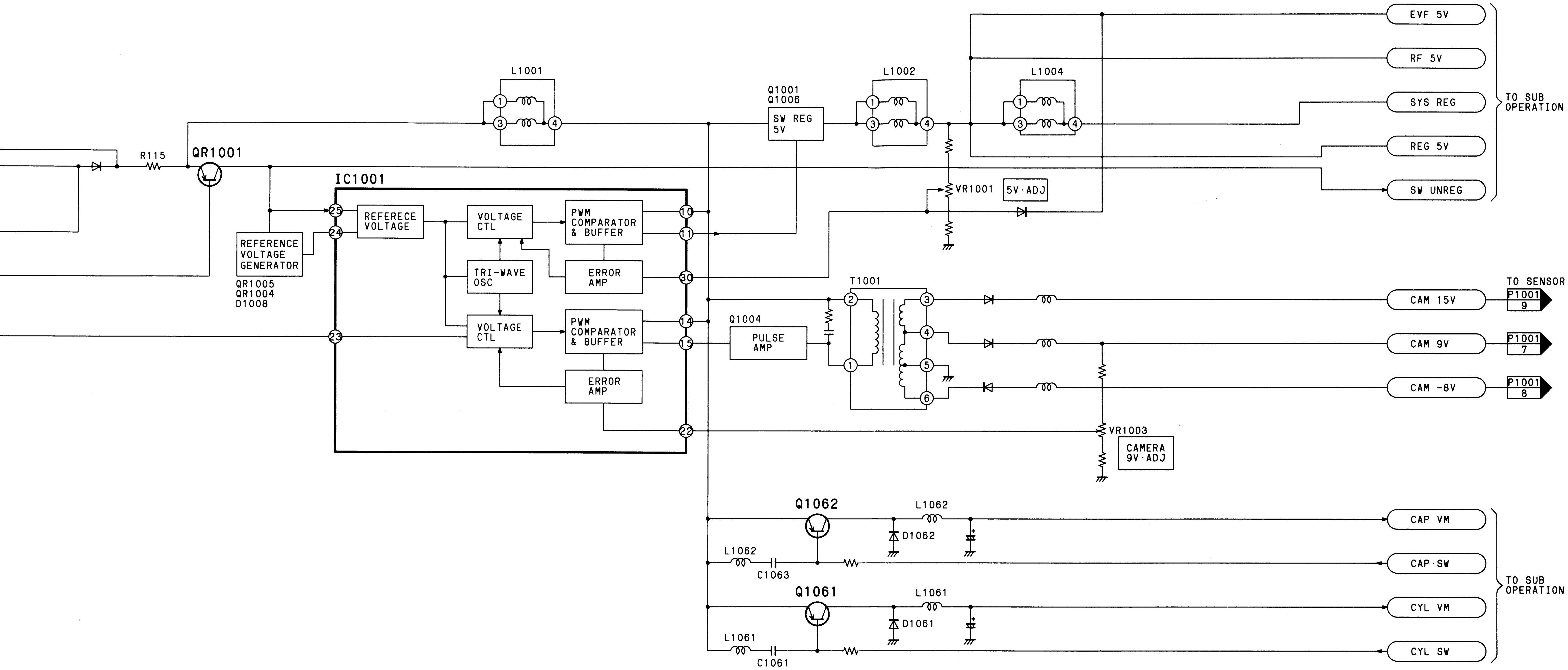
3-5. EVF BLOCK DIAGRAM


VIDEO IN
P802
2
IC801
11
AMP
MIX
13
SYNC SEPARATOR
VERTICAL SYNC SEPARATOR
VERTICAL OSC
HORIZONTAL AFC
HORIZONTAL OSC
VERTICAL DRIVE
16
5
1
3
Q803
AMP
EVF 5V FROM P802-1
VR804
T801
5
4
3
2
1
6
7
8
P801
2
P801
1
V DEFLECTION COIL
VR801
V SIZE
Q802
AMP
P801
4
P801
3
H DEFLECTION COIL
G1
CRT
H
VR803
HK
G2
G3

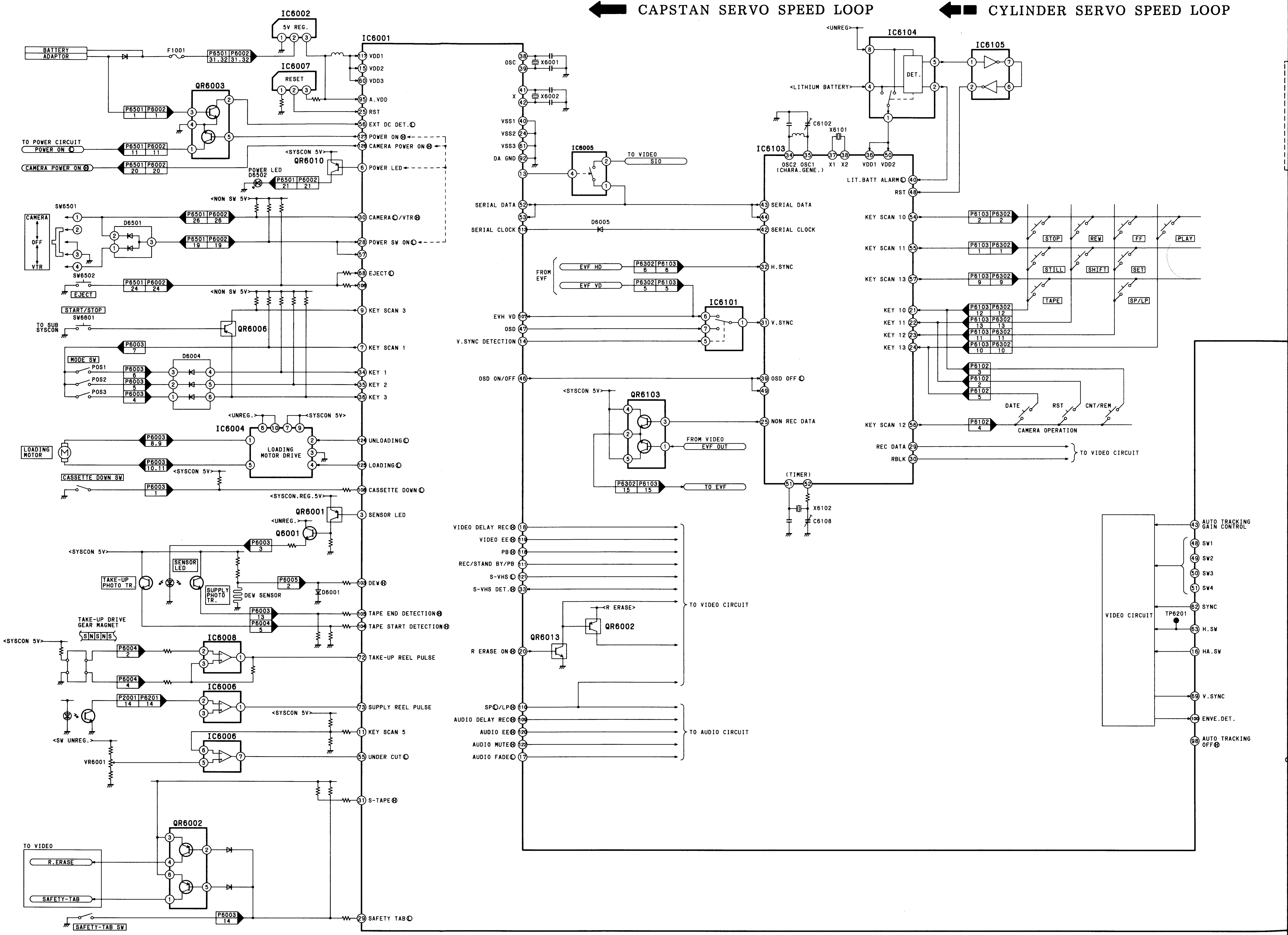
3-6. POWER BLOCK DIAGRAM


BATTERY
⊖
⊕
1
2
3
4
EXTDC
R115
QR1001
EXT DC DET
POWER ON Ⓛ
CAM POWER ON Ⓗ
REF
VOL
GEN
QR1
QR1
D10

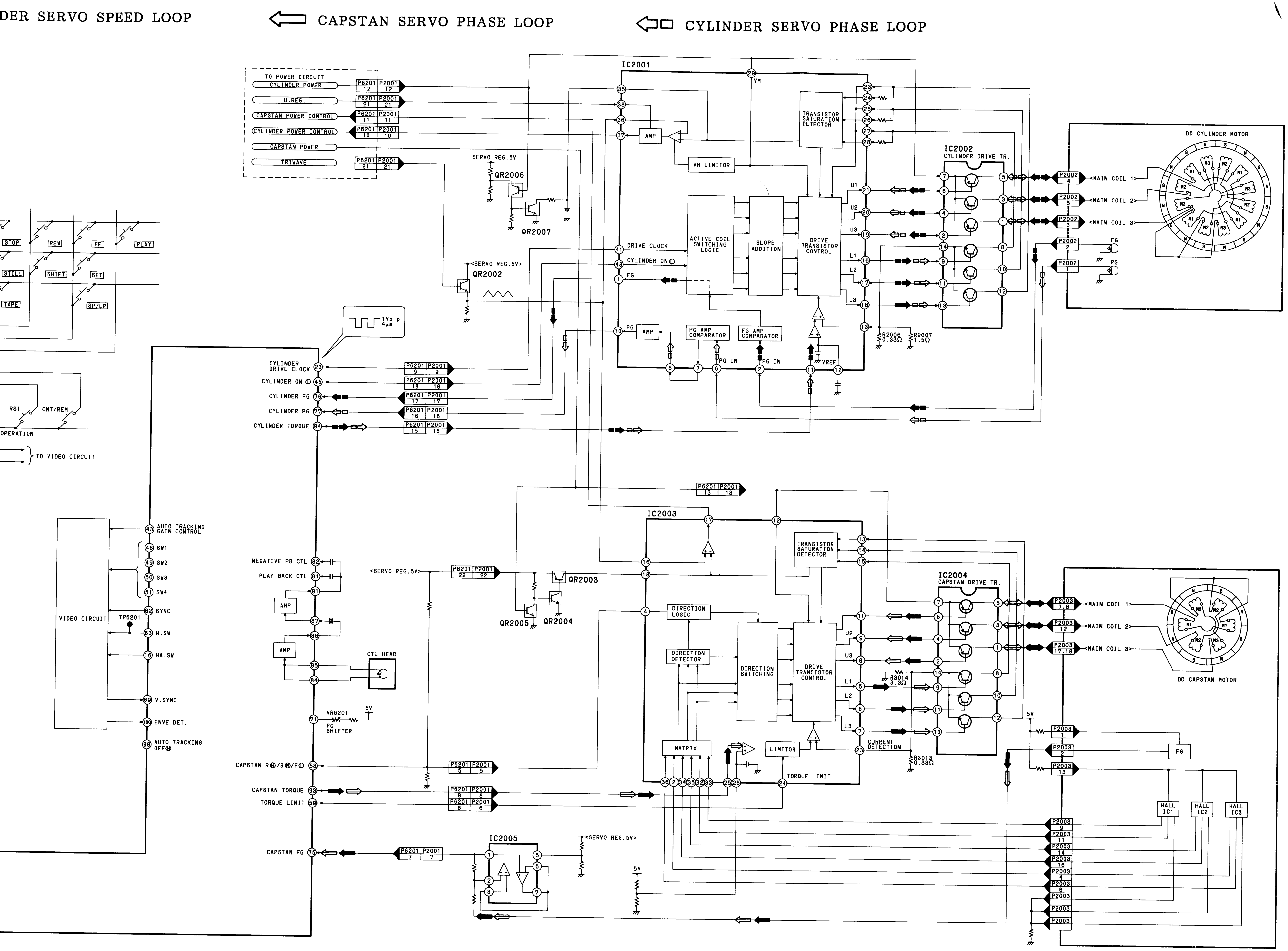
CK DIAGRAM


L1001
Q1001
Q1006
SW REG
5V
L1002
L1004
EVF 5V
RF 5V
SYS REG
REG 5V
SW UNREG
TO SUB
OPERATION
R115
QR1001
IC1001
REFERECE
VOLTAGE
VOLTAGE
CTL
PWM
COMPARATOR
& BUFFER
TRI-WAVE
OSC
ERROR
AMP
VOLTAGE
CTL
PWM
COMPARATOR
& BUFFER
ERROR
AMP
REFERENCE
VOLTAGE
GENERATOR
QR1005
QR1004
D1008
25
24
23
10
11
30
14
15
22
VR1001
5V·ADJ
T1001
Q1004
PULSE
AMP
1
2
3
4
5
6
TO SENSOR
CAM 15V
P1001
9
CAM 9V
P1001
7
CAM -8V
P1001
8
VR1003
CAMERA
9V·ADJ
Q1062
L1062
D1062
L1062
C1063
CAP VM
CAP·SW
Q1061
L1061
D1061
L1061
C1061
CYL VM
CYL SW
TO SUB
OPERATION

3-7. SERVO & SYSTEM CONTROL BLOCK DIAGRAM


CAPSTAN SERVO SPEED LOOP
CYLINDER SERVO SPEED LOOP
IC6002
5V REG.
IC6001
BATTERY ADAPTOR
F1001
P6501 P6002 31.32 31.32
IC6007
RESET
VDD1
VDD2
VDD3
A.VDD
RST
QR6003
EXT DC DET.
POWER ON
CAMERA POWER ON
TO POWER CIRCUIT
POWER ON
CAMERA POWER ON
<SYSCON 5V>
QR6010
POWER LED
D6502
POWER LED
<NON SW 5V>
SW6501
CAMERA
OFF
VTR
D6501
CAMERA/VTR
POWER SW ON
SW6502
EJECT
KEY SCAN 3
START/STOP
SW6601
TO SUB SYSCON
QR6006
KEY SCAN 1
MODE SW
POS1
POS2
POS3
D6004
KEY 1
KEY 2
KEY 3
<UNREG.>
<SYSCON 5V>
IC6004
LOADING MOTOR DRIVE
LOADING MOTOR
UNLOADING
LOADING
CASSETTE DOWN SW
CASSETTE DOWN
<SYSCON.REG.5V>
QR6001
SENSOR LED
Q6001
DEW
TAKE-UP PHOTO TR.
SENSOR LED
SUPPLY PHOTO TR.
DEW SENSOR
D6001
TAPE END DETECTION
TAPE START DETECTION
TAKE-UP DRIVE GEAR MAGNET
IC6008
TAKE-UP REEL PULSE
IC6006
SUPPLY REEL PULSE
KEY SCAN 5
<SW UNREG.>
VR6001
UNDER CUT
S-TAPE
QR6002
TO VIDEO
R.ERASE
SAFETY-TAB
SAFETY-TAB SW
SAFETY TAB
OSC
X6001
X
X6002
VSS1
VSS2
VSS3
DA GND
IC6005
TO VIDEO
SIO
SERIAL DATA
SERIAL CLOCK
D6005
FROM EVF
EVF HD
EVF VD
P6302 P6103
H.SYNC
IC6101
EVH VD
OSD
V.SYNC DETECTION
V.SYNC
OSD ON/OFF
OSD OFF
QR6103
NON REC DATA
FROM VIDEO
EVF OUT
TO EVF
VIDEO DELAY REC
VIDEO EE
PB
REC/STAND BY/PB
S-VHS
S-VHS DET.
<R ERASE>
QR6013
R ERASE ON
TO VIDEO CIRCUIT
SP/LP
AUDIO DELAY REC
AUDIO EE
AUDIO MUTE
AUDIO FADE
TO AUDIO CIRCUIT
<UNREG>
IC6104
IC6105
DET.
<LITHIUM BATTERY>
C6102
X6101
IC6103
OSC2 OSC1 (CHARA.GENE.)
X1 X2
VDD1 VDD2
LIT.BATT ALARM
RST
KEY SCAN 10
KEY SCAN 11
KEY SCAN 13
STOP
REW
FF
PLAY
STILL
SHIFT
SET
TAPE
SP/LP
KEY 10
KEY 11
KEY 12
KEY 13
P6102
DATE
RST
CNT/REM
KEY SCAN 12
CAMERA OPERATION
REC DATA
RBLK
TO VIDEO CIRCUIT
(TIMER)
X6102
C6108
VIDEO CIRCUIT
AUTO TRACKING GAIN CONTROL
SW1
SW2
SW3
SW4
SYNC
TP6201
H.SW
HA.SW
V.SYNC
ENVE.DET.
AUTO TRACKING OFF

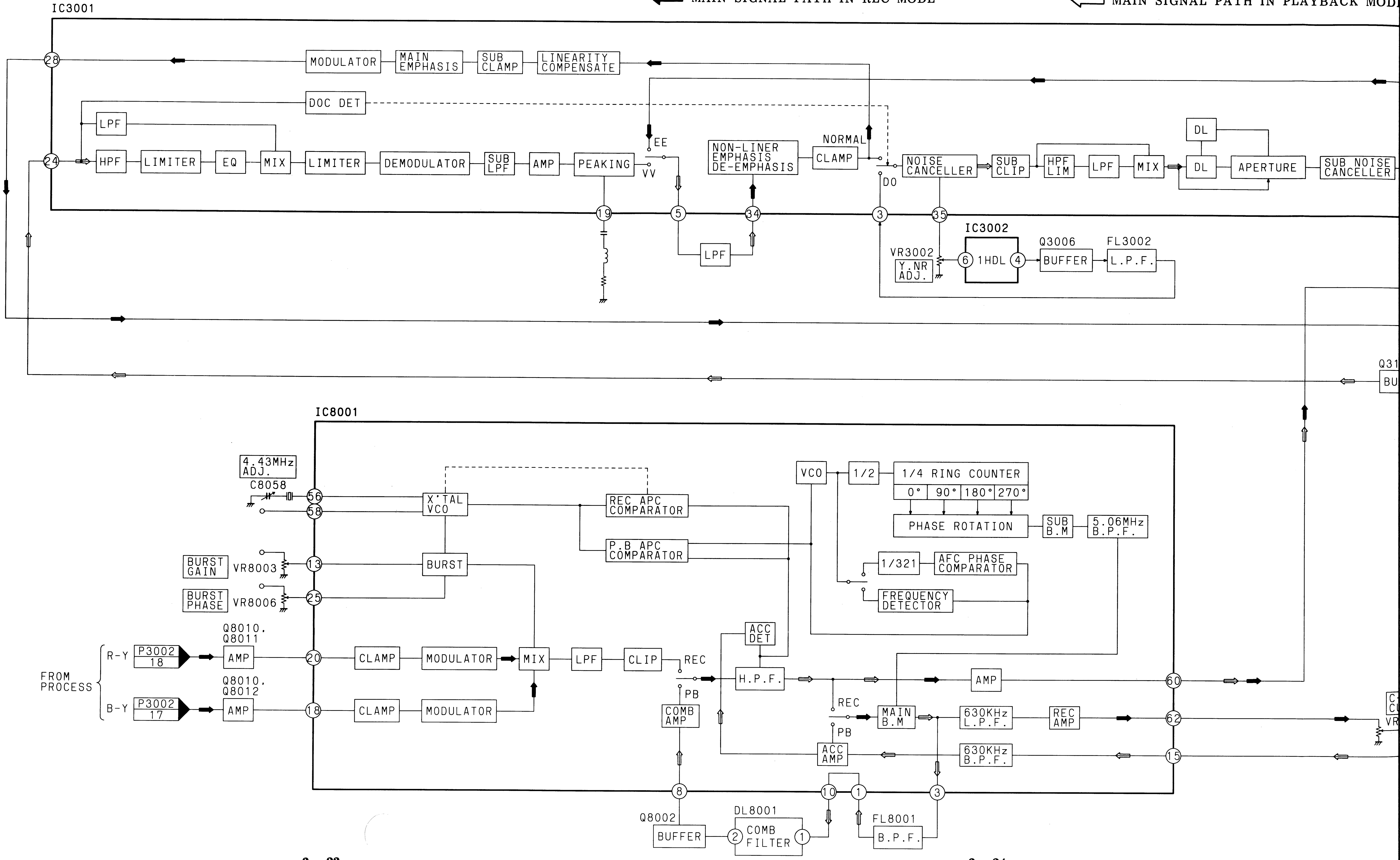
Back Page:
EVF & POWER Section


DER SERVO SPEED LOOP
CAPSTAN SERVO PHASE LOOP
CYLINDER SERVO PHASE LOOP
TO POWER CIRCUIT
CYLINDER POWER
U.REG.
CAPSTAN POWER CONTROL
CYLINDER POWER CONTROL
CAPSTAN POWER
TRIWAVE
P6201 P2001
SERVO REG.5V
QR2006
QR2007
QR2002
IC2001
VM
AMP
VM LIMITOR
TRANSISTOR SATURATION DETECTOR
DRIVE CLOCK
CYLINDER ON
FG
PG
ACTIVE COIL SWITCHING LOGIC
SLOPE ADDITION
DRIVE TRANSISTOR CONTROL
PG AMP COMPARATOR
FG AMP COMPARATOR
PG IN
FG IN
VREF
U1
U2
U3
L1
L2
L3
R2006 0.33Ω
R2007 1.5Ω
IC2002 CYLINDER DRIVE TR.
DD CYLINDER MOTOR
P2002
MAIN COIL 1
MAIN COIL 2
MAIN COIL 3
M1
M2
M3
N
S
STOP
REW
FF
PLAY
STILL
SHIFT
SET
TAPE
SP/LP
RST
CNT/REM
OPERATION
TO VIDEO CIRCUIT
1Vp-p 4μs
CYLINDER DRIVE CLOCK
CYLINDER ON
CYLINDER FG
CYLINDER PG
CYLINDER TORQUE
AUTO TRACKING GAIN CONTROL
SW1
SW2
SW3
SW4
SYNC
VIDEO CIRCUIT
TP6201
H.SW
HA.SW
V.SYNC
ENVE.DET.
AUTO TRACKING OFF
NEGATIVE PB CTL
PLAY BACK CTL
AMP
CTL HEAD
VR6201
PG SHIFTER
5V
CAPSTAN R/S/F
CAPSTAN TORQUE
TORQUE LIMIT
CAPSTAN FG
IC2005
IC2003
QR2003
QR2004
QR2005
DIRECTION LOGIC
DIRECTION DETECTOR
DIRECTION SWITCHING
DRIVE TRANSISTOR CONTROL
MATRIX
LIMITOR
TORQUE LIMIT
CURRENT DETECTION
R3014 3.3Ω
R3013 0.33Ω
IC2004 CAPSTAN DRIVE TR.
P2003
DD CAPSTAN MOTOR
HALL IC1
HALL IC2
HALL IC3

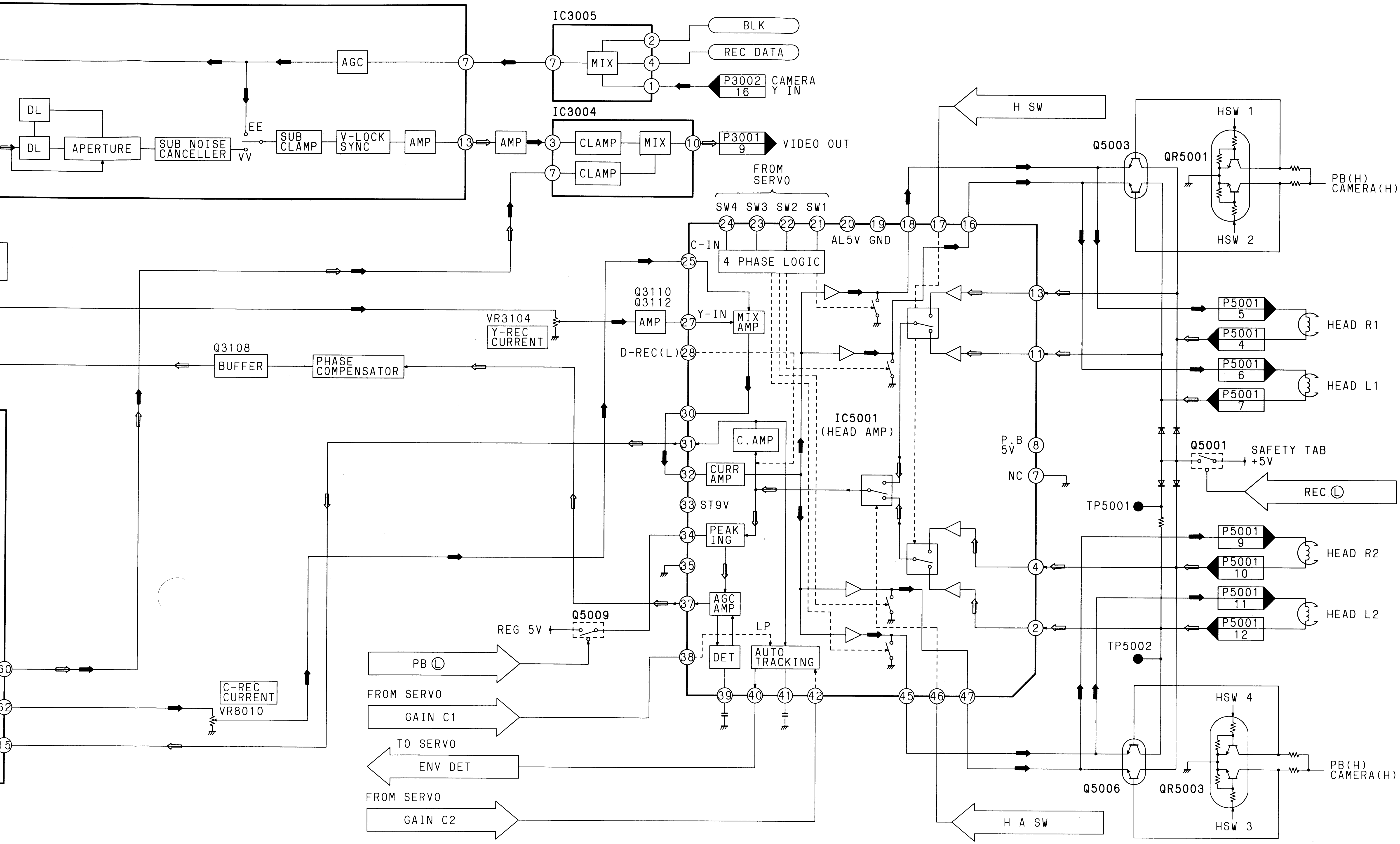
3-8. LUMINANCE & CHROMINANCE BLOCK DIAGRAM

MAIN SIGNAL PATH IN REC MODE

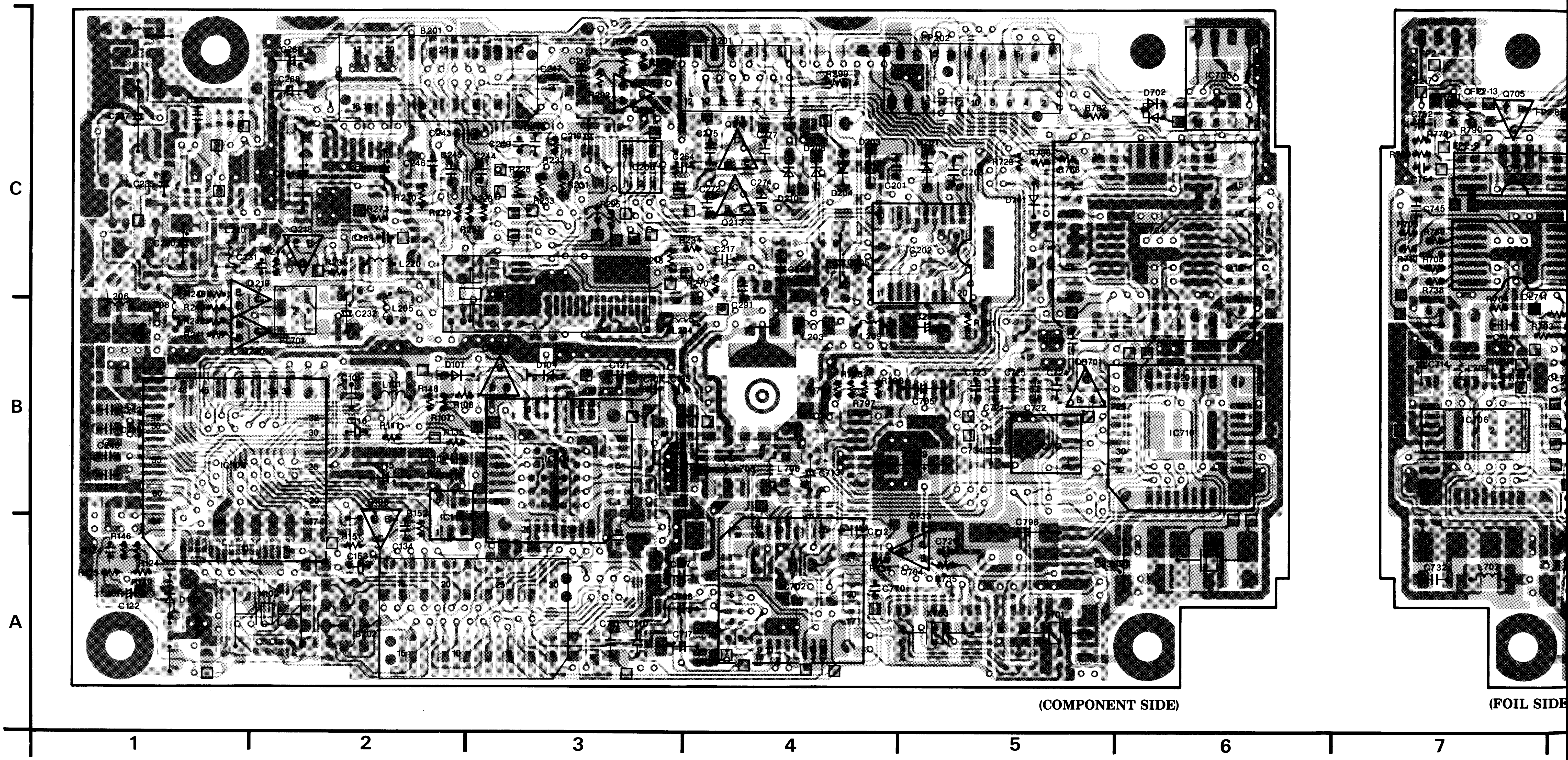
MAIN SIGNAL PATH IN PLAYBACK MOD


IC3001
28
MODULATOR
MAIN EMPHASIS
SUB CLAMP
LINEARITY COMPENSATE
DOC DET
LPF
24
HPF
LIMITER
EQ
MIX
LIMITER
DEMODULATOR
SUB LPF
AMP
PEAKING
EE
VV
NON-LINER EMPHASIS DE-EMPHASIS
CLAMP
NORMAL
DO
NOISE CANCELLER
SUB CLIP
HPF LIM
LPF
MIX
DL
DL
APERTURE
SUB NOISE CANCELLER
19
5
34
LPF
3
35
IC3002
VR3002
Y.NR ADJ.
6
1HDL
4
Q3006
BUFFER
FL3002
L.P.F.
Q31
BU
IC8001
4.43MHz ADJ.
C8058
56
58
X'TAL VCO
REC APC COMPARATOR
P.B APC COMPARATOR
BURST GAIN
VR8003
13
BURST
BURST PHASE
VR8006
25
VCO
1/2
1/4 RING COUNTER
0°
90°
180°
270°
PHASE ROTATION
SUB B.M
5.06MHz B.P.F.
1/321
AFC PHASE COMPARATOR
FREQUENCY DETECTOR
Q8010, Q8011
Q8010, Q8012
FROM PROCESS
R-Y
B-Y
P3002 18
P3002 17
AMP
AMP
20
18
CLAMP
MODULATOR
CLAMP
MODULATOR
MIX
LPF
CLIP
REC
PB
ACC DET
H.P.F.
COMB AMP
AMP
60
REC
PB
MAIN B.M
630KHz L.P.F.
REC AMP
62
ACC AMP
630KHz B.P.F.
15
C
CI
VR
8
10
1
3
Q8002
BUFFER
DL8001
2
COMB FILTER
1
FL8001
B.P.F.

IGNAL PATH IN PLAYBACK MODE


IC3005
BLK
REC DATA
MIX
P3002
16
CAMERA
Y IN
AGC
DL
DL
APERTURE
EE
SUB NOISE
CANCELLER
VV
SUB
CLAMP
V-LOCK
SYNC
AMP
AMP
IC3004
CLAMP
MIX
CLAMP
P3001
9
VIDEO OUT
H SW
Q5003
QR5001
HSW 1
HSW 2
PB(H)
CAMERA(H)
FROM
SERVO
SW4 SW3 SW2 SW1
AL5V GND
C-IN
4 PHASE LOGIC
Q3110
Q3112
AMP
Y-IN
MIX
AMP
VR3104
Y-REC
CURRENT
Q3108
BUFFER
PHASE
COMPENSATOR
D-REC(L)
IC5001
(HEAD AMP)
C.AMP
CURR
AMP
ST9V
PEAK
ING
AGC
AMP
DET
AUTO
TRACKING
LP
P.B
5V
NC
P5001
5
4
6
7
9
10
11
12
HEAD R1
HEAD L1
HEAD R2
HEAD L2
Q5001
SAFETY TAB
+5V
REC Ⓛ
TP5001
TP5002
REG 5V
Q5009
PB Ⓛ
FROM SERVO
GAIN C1
TO SERVO
ENV DET
FROM SERVO
GAIN C2
C-REC
CURRENT
VR8010
H A SW
Q5006
QR5003
HSW 4
HSW 3
PB(H)
CAMERA(H)

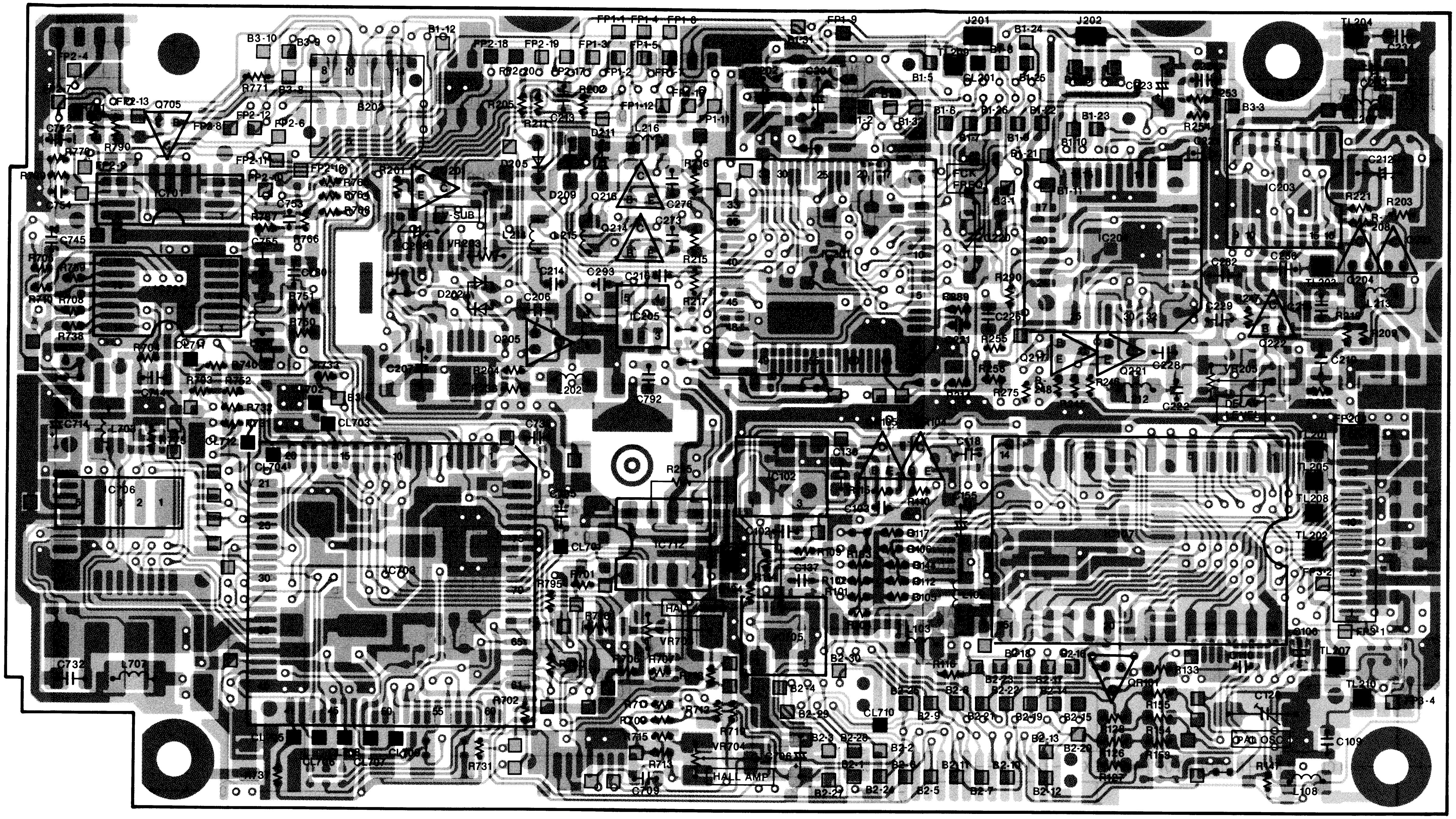
3-9. SENSOR C.B.A. (VEP22112A)


C
B
A
1
2
3
4
5
6
7

(COMPONENT SIDE)

(FOIL SIDE

Back Page:
LUMINANCE & CHROMINANCE Section

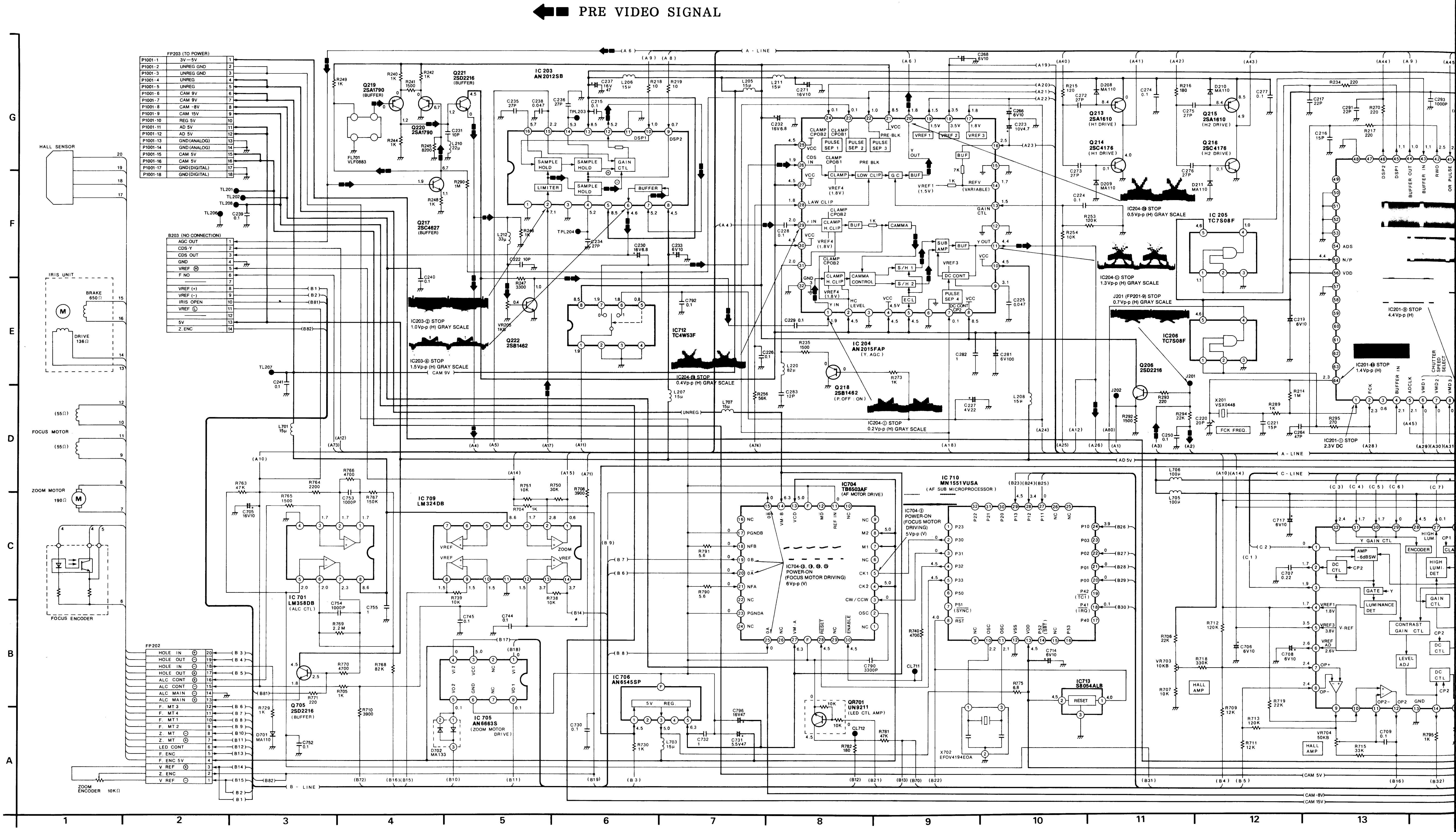

FP2-1
B3-10
B3-9
B1-12
FP1-1
FP1-4
FP1-8
FP1-9
J201
B1-24
J202
TL204
FP2-18
FP2-19
FP1-3
FP1-5
CFP2-13
Q705
R771
B203
R205
R202
FP1-12
FP1-11
B1-5
CL201
B1-25
B3-3
C223
C753
R790
IC701
FP2-16
FP2-12
FP2-6
FP2-8
FP2-9
FP2-11
FP2-10
D211
L216
Q205
D209
Q216
Q215
Q214
R215
R216
C213
C276
B1-6
B1-26
B1-22
B1-23
B1-4
B1-21
B1-11
B3-1
IC203
R221
R203
C212
IC204
Q204
TL203
C745
R757
R766
R755
C756
R751
R750
VR203
C214
C293
C216
IC205
R217
D202
C206
C207
Q202
C229
Q203
Q222
R209
C278
VR205
R254
R255
R256
R248
R275
Q217
Q221
C228
C292
IC702
R733
R738
R752
R740
CL703
CL712
CL704
CL705
C714
L704
IC706
C706
C792
R235
C135
C136
Q103
Q104
Q106
C118
C155
IC102
IC712
CL701
R795
C701
R796
R708
R707
VR703
R702
C732
L701
R731
CL706
CL707
CL709
C709
R703
R700
R715
R713
R711
R712
VR704
HALL AMP
HALL
IC703
IC104
IC105
C137
C102
R109
R102
R101
B2-30
B2-4
B2-29
CL710
B2-3
B2-26
B2-2
B2-1
B2-24
B2-27
B2-5
B2-6
B2-7
B2-8
B2-9
B2-11
B2-12
B2-13
B2-15
B2-16
B2-18
B2-19
B2-20
B2-21
B2-22
B2-23
B2-25
QR101
R133
R135
R144
R158
R126
R128
R137
C120
C109
L108
PAL OSC
TL201
TL202
TL205
TL206
TL207
TL208
TL209
TL210
FP3-1
FP3-2
FP3-4
FP201
IC106
C105

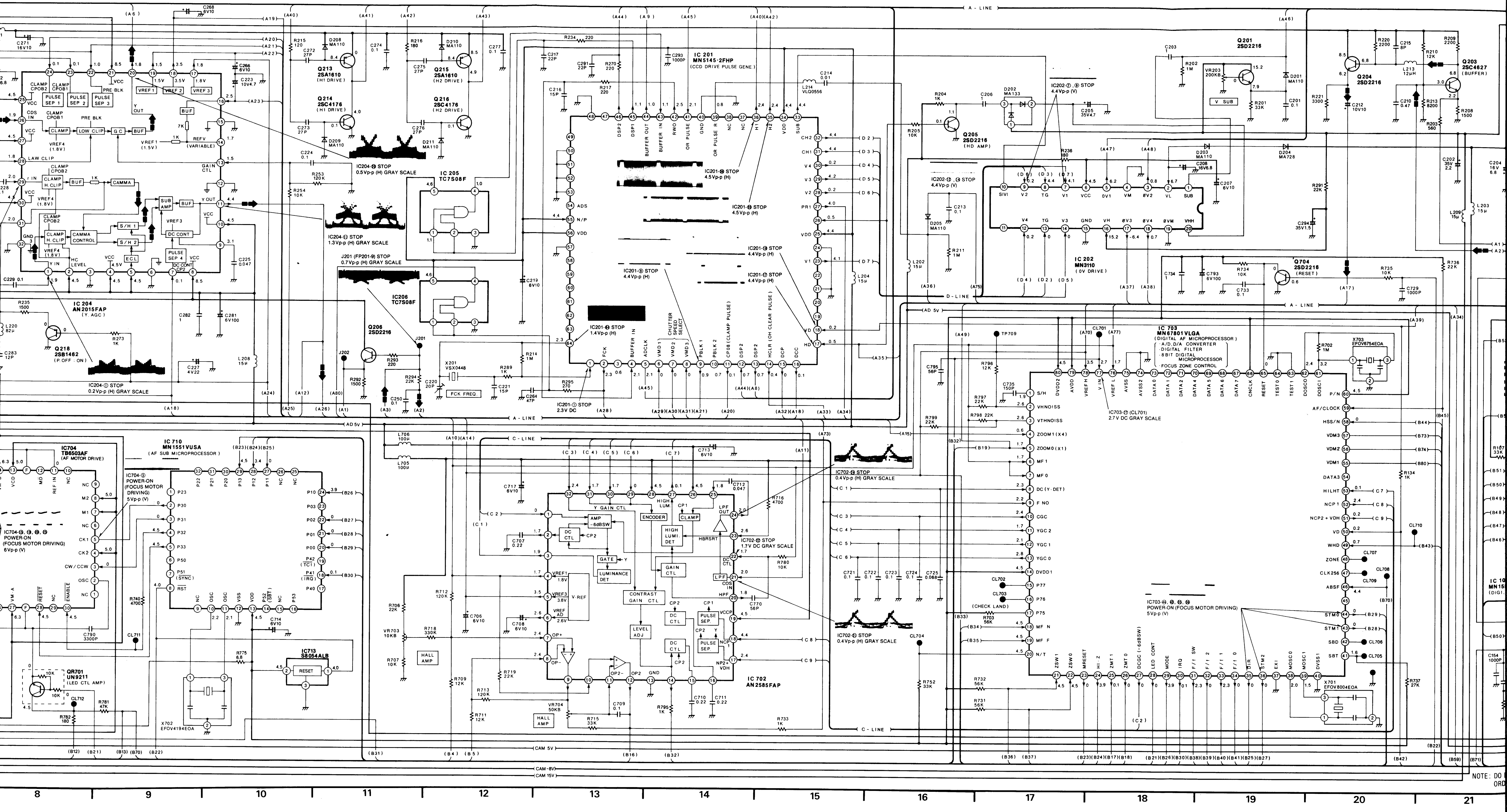
(FOIL SIDE)

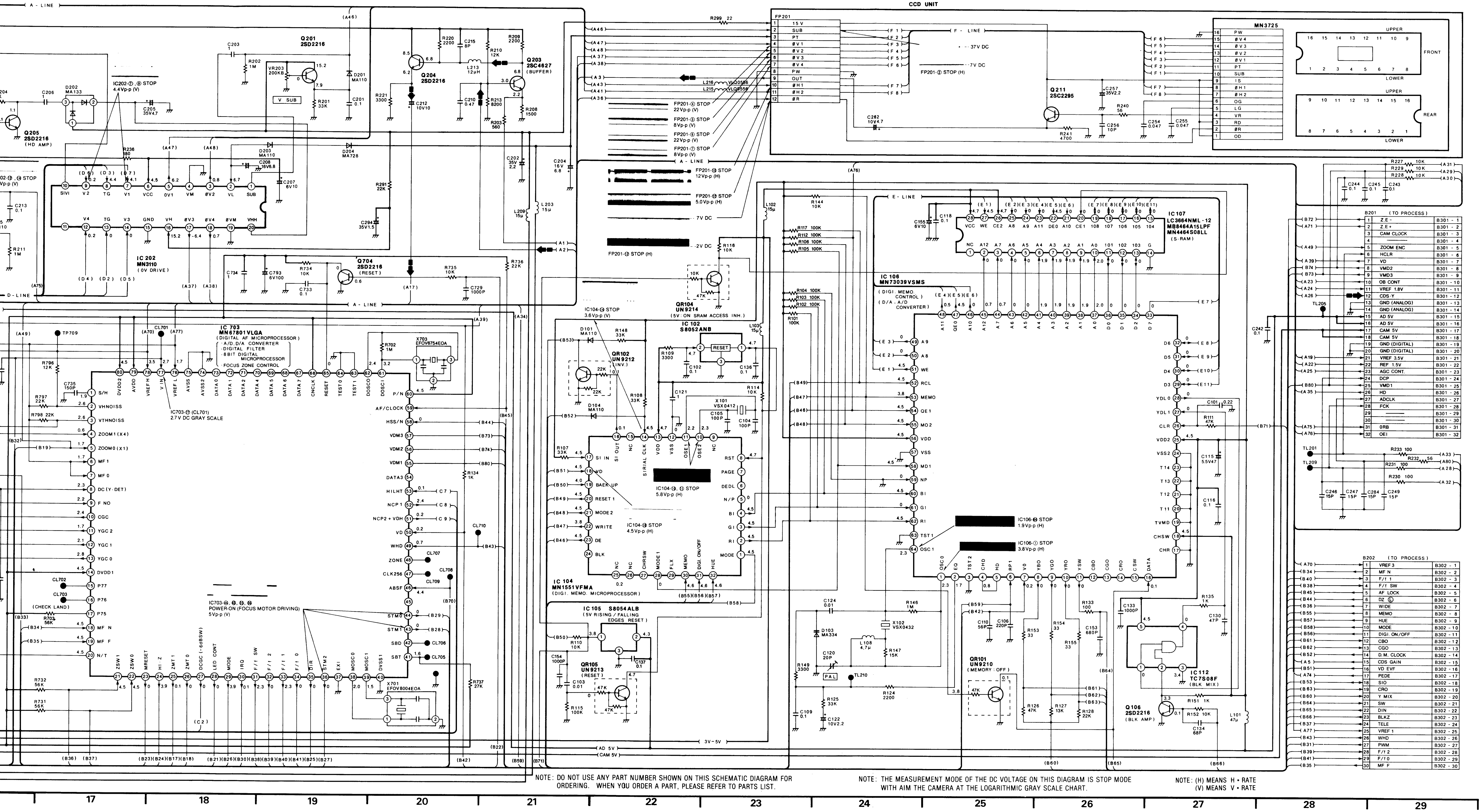
SENSOR C.B.A.		
Transistor		
Q106	B-2	Ⓒ
Q201	C-8	Ⓕ
Q203	C-12	Ⓕ
Q204	C-12	Ⓕ
Q205	C-9	Ⓕ
Q206	C-3	Ⓒ
Q213	C-4	Ⓒ
Q214	C-9	Ⓕ
Q215	C-4	Ⓒ
Q216	C-9	Ⓕ
Q217	B-11	Ⓕ
Q218	C-2	Ⓒ
Q219	C-2	Ⓒ
Q220	B-2	Ⓒ
Q221	B-11	Ⓕ
Q222	C-12	Ⓕ
Q704	A-5	Ⓒ
Q705	C-7	Ⓕ
Transistor & Resistor		
QR101	A-11	Ⓕ
QR102	B-3	Ⓒ
QR104	B-10	Ⓕ
QR105	B-10	Ⓕ
QR701	B-5	Ⓒ
Integrated Circuit		
IC102	B-10	Ⓕ
IC104	B-3	Ⓒ
IC105	A-10	Ⓕ
IC106	B-1	Ⓒ
IC107	B-11	Ⓕ
IC112	A-2	Ⓒ
IC201	C-10	Ⓕ
IC202	C-5	Ⓒ
IC203	C-12	Ⓕ
IC204	C-11	Ⓕ
IC205	C-9	Ⓕ
IC206	C-3	Ⓒ
IC701	C-7	Ⓕ
IC702	A-4	Ⓒ
IC703	B-8	Ⓕ
IC704	C-6	Ⓒ
IC705	C-6	Ⓒ
IC706	B-7	Ⓕ
IC709	C-7	Ⓕ
IC710	B-6	Ⓒ
IC712	B-9	Ⓕ
IC713	B-5	Ⓒ
Test Point		
CL201	C-10	Ⓕ
CL701	B-9	Ⓕ
CL702	B-8	Ⓕ
CL703	B-8	Ⓕ
CL704	B-8	Ⓕ
CL705	A-8	Ⓕ
CL706	A-8	Ⓕ
CL707	A-8	Ⓕ
CL708	A-8	Ⓕ
CL709	A-8	Ⓕ
CL710	A-10	Ⓕ
CL711	C-7	Ⓕ
CL712	B-8	Ⓕ
J201	C-11	Ⓕ
J202	C-11	Ⓕ
TL201	B-12	Ⓕ
TL202	B-12	Ⓕ
TL203	C-12	Ⓕ
TL204	C-12	Ⓕ
TL205	B-12	Ⓕ
TL206	B-10	Ⓕ
TL207	A-12	Ⓕ
TL208	B-12	Ⓕ
TL209	C-10	Ⓕ
TL210	A-12	Ⓕ
Adjustment		
C120	A-12	Ⓕ
C220	C-11	Ⓕ
VR203	C-9	Ⓕ
VR205	B-12	Ⓕ
VR703	A-9	Ⓕ
VR704	A-10	Ⓕ
Connector		
B201	C-2	Ⓒ
B202	A-2	Ⓒ
B203	C-8	Ⓕ
FP201	C-4	Ⓒ
FP202	C-5	Ⓒ
FP203	B-12	Ⓕ

ADDRESS INFORMATION
Ⓒ... COMPONENT SIDE
Ⓕ... FOIL SIDE

3-10. SENSOR SCHEMATIC DIAGRAM


PRE VIDEO SIGNAL
FP203 (TO POWER)
P1001-1 3V—5V
P1001-2 UNREG GND
P1001-3 UNREG GND
P1001-4 UNREG
P1001-5 UNREG
P1001-6 CAM 9V
P1001-7 CAM 9V
P1001-8 CAM -8V
P1001-9 CAM 15V
P1001-10 REG 5V
P1001-11 AD 5V
P1001-12 AD 5V
P1001-13 GND(ANALOG)
P1001-14 GND(ANALOG)
P1001-15 CAM 5V
P1001-16 CAM 5V
P1001-17 GND(DIGITAL)
P1001-18 GND(DIGITAL)
HALL SENSOR
B203 (NO CONNECTION)
AGC OUT
CDS-Y
CDS OUT
GND
VREF (H)
F NO
VREF (+)
VREF (-)
IRIS OPEN
VREF (L)
5V
Z. ENC
IRIS UNIT
BRAKE 650Ω
DRIVE 136Ω
FOCUS MOTOR
(55Ω)
ZOOM MOTOR 190Ω
FOCUS ENCODER
FP202
HOLE IN ⊕
HOLE OUT ⊖
HOLE IN ⊖
HOLE OUT ⊕
ALC CONT ⊕
ALC CONT ⊖
ALC MAIN ⊖
ALC MAIN ⊕
F. MT3
F. MT4
F. MT1
F. MT2
Z. MT ⊖
Z. MT ⊕
LED CONT
F. ENC
F. ENC 5V
V REF ⊕
Z. ENC
V REF ⊖
ZOOM ENCODER 10KΩ
Q219 2SA1790 (BUFFER)
Q220 2SA1790
Q221 2SD2216 (BUFFER)
Q217 2SC4627 (BUFFER)
FL701 VLF0883
IC 203 AN2012SB
SAMPLE HOLD
LIMITER
GAIN CTL
BUFFER
DSP1
DSP2
IC203-② STOP 1.0Vp-p (H) GRAY SCALE
IC203-⑥ STOP 1.5Vp-p (H) GRAY SCALE
Q222 2SB1462
IC712 TC4W53F
IC204-⑪ STOP 0.4Vp-p (H) GRAY SCALE
IC 204 AN2015FAP (Y AGC)
CLAMP CPOB2
CLAMP CPOB1
PULSE SEP 1
PULSE SEP 2
PULSE SEP 3
PRE BLK
LOW CLIP
G C
BUF
VREF 1
VREF 2
VREF 3
REFV (VARIABLE)
GAIN CTL
LAW CLIP
H.CLIP
GAMMA
SUB AMP
Y OUT
GAMMA CONTROL
S/H 1
S/H 2
DC CONT
PULSE SEP 4
ECL
HC LEVEL
Y IN
Q218 2SB1462 (P.OFF : ON)
IC204-① STOP 0.2Vp-p (H) GRAY SCALE
Q213 2SA1610 (H1 DRIVE)
Q214 2SC4176 (H1 DRIVE)
Q215 2SA1610 (H2 DRIVE)
Q216 2SC4176 (H2 DRIVE)
IC204-⑯ STOP 0.5Vp-p (H) GRAY SCALE
IC204-⑪ STOP 1.3Vp-p (H) GRAY SCALE
J201 (FP201-9) STOP 0.7Vp-p (H) GRAY SCALE
IC 205 TC7S08F
IC206 TC7S08F
Q206 2SD2216
X201 VSX0448
FCK FREQ.
IC201-① STOP 2.3V DC
IC201-⑥ STOP 1.4Vp-p (H)
IC201-⑥ STOP 4.4Vp-p (H)
ADS
N/P
VDD
DSP2
DSP1
BUFFER OUT
BUFFER IN
RWO
OR PULSE
FCK
ADCLK
VMD1
VMD2
VMD3
SHUTTER SPEED SELECT
A - LINE
B - LINE
C - LINE
AD 5V
CAM 5V
CAM 8V
CAM 15V
CAM 9V
(UNREG)
IC 709 LM324DB
ZOOM
VREF
IC 701 LM358DB (ALC CTL)
Q705 2SD2216 (BUFFER)
D701 MA110
D702 MA133
IC 705 AN6663S (ZOOM MOTOR DRIVE)
IC 706 AN6545SP
5V REG
IC704 TB6503AF (AF MOTOR DRIVE)
IC704-③ POWER-ON (FOCUS MOTOR DRIVING) 5Vp-p (V)
IC704-⑲, ⑳, ㉕, ㉖ POWER-ON (FOCUS MOTOR DRIVING) 6Vp-p (V)
IC 710 MN1551VUSA (AF SUB MICROPROCESSOR)
QR701 UN9211 (LED CTL AMP)
CL711
CL712
X702 EFOV4194EOA
IC713 S8054ALB
RESET
AMP -6dBSW
Y GAIN CTL
ENCODER
HIGH LUM
DC CTL
GATE
LUMINANCE DET
HIGH LUMI. DET
GAIN CTL
CONTRAST GAIN CTL
LEVEL ADJ
V-REF
HALL AMP
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13


IC 204
AN2015FAP
(Y. AGC)
IC 201
MN5145-2FHP
(CCD DRIVE PULSE GENE.)
IC 205
TC7S08F
IC206
TC7S08F
IC 202
MN3110
(OV DRIVE)
IC 703
MN67801VLGA
(DIGITAL AF MICROPROCESSOR)
A/D, D/A CONVERTER
DIGITAL FILTER
8BIT DIGITAL MICROPROCESSOR
FOCUS ZONE CONTROL
IC704
TB6503AF
(AF MOTOR DRIVE)
IC 710
MN1551VUSA
(AF SUB MICROPROCESSOR)
IC 702
AN2585FAP
IC713
S8054ALB
Q213 2SA1610 (H1 DRIVE)
Q214 2SC4176 (H1 DRIVE)
Q215 2SA1610 (H2 DRIVE)
Q216 2SC4176 (H2 DRIVE)
Q205 2SD2216 (HD AMP)
Q201 2SD2216
Q204 2SD2216
Q203 2SC4627 (BUFFER)
Q206 2SD2216
Q218 2SB1462 (P.OFF · ON)
Q704 2SD2216 (RESET)
QR701 UN9211 (LED CTL AMP)
X201 VSX0448
X702 EFOV4194EOA
X703 EFOV6754EOA
X701 EFOV8004EOA
IC204-⑮ STOP 0.5Vp-p (H) GRAY SCALE
IC204-⑪ STOP 1.3Vp-p (H) GRAY SCALE
IC204-① STOP 0.2Vp-p (H) GRAY SCALE
J201 (FP201-⑨) STOP 0.7Vp-p (H) GRAY SCALE
IC201-⑱ STOP 4.5Vp-p (H)
IC201-㉞ STOP 4.5Vp-p (H)
IC201-⑤ STOP 4.4Vp-p (H)
IC201-㉔ STOP 4.4Vp-p (H)
IC201-⑰ STOP 4.4Vp-p (H)
IC201-㉔ STOP 1.4Vp-p (H)
IC201-① STOP 2.3V DC
IC202-⑦, ⑧ STOP 4.4Vp-p (V)
IC202-③, ④ STOP 4.4Vp-p (V)
IC703-⑦ (CL701) 2.7V DC GRAY SCALE
IC702-㉓ STOP 0.4Vp-p (H) GRAY SCALE
IC702-㉒ STOP 1.7V DC GRAY SCALE
IC702-㉑ STOP 0.4Vp-p (H) GRAY SCALE
IC704-⑤ POWER-ON (FOCUS MOTOR DRIVING) 5Vp-p (V)
IC704-③, ④, ⑤, ⑥ POWER-ON (FOCUS MOTOR DRIVING) 6Vp-p (V)
IC703-㊷, ㊸, ㊹, ㊺ POWER-ON (FOCUS MOTOR DRIVING) 5Vp-p (V)
A - LINE
C - LINE
D - LINE
AD 5V
CAM 5V
CAM -8V
CAM 15V
FCK FREQ.
HALL AMP
V SUB
8
9
10
11
12
13
14
15
16
17
18
19
20
21
NOTE: DO
ORD


A - LINE
CCD UNIT
FP201
MN3725
UPPER
LOWER
FRONT
REAR
Q201 2SD2216
Q203 2SC4627 (BUFFER)
Q204 2SD2216
Q205 2SD2216 (HD AMP)
Q211 2SC2295
IC202-⑦, ⑧ STOP 4.4Vp-p (V)
V SUB
IC 202 MN3110 (OV DRIVE)
D-LINE
E-LINE
FP201-④ STOP 22Vp-p (V)
FP201-⑤ STOP 8Vp-p (V)
FP201-⑥ STOP 22Vp-p (V)
FP201-⑦ STOP 8Vp-p (V)
FP201-⑩ STOP 12Vp-p (H)
FP201-⑪ STOP 5.0Vp-p (H)
FP201-③ STOP (H)
FP201-⑪ STOP (H)
-37V DC
-7V DC
-7V DC
-2V DC
Q704 2SD2216 (RESET)
IC 703 MN67801VLGA (DIGITAL AF MICROPROCESSOR) (A/D, D/A CONVERTER, DIGITAL FILTER, 8BIT DIGITAL MICROPROCESSOR, FOCUS ZONE CONTROL)
IC703-⑰ (CL701) 2.7V DC GRAY SCALE
IC703-㊺, ㊻, ㊼, ㊽ POWER-ON (FOCUS MOTOR DRIVING) 5Vp-p (V)
X703 EFOV6754EOA
X701 EFOV8004EOA
IC104-⑬ STOP 3.6Vp-p (V)
QR102 UN9212 (INV.)
IC 102 S8052ANB
QR104 UN9214 (5V ON SRAM ACCESS INH.)
IC104-⑨, ⑪ STOP 5.8Vp-p (H)
IC104-⑩ STOP 4.5Vp-p (H)
IC 104 MN1551VFMA (DIGI. MEMO. MICROPROCESSOR)
IC 105 S8054ALB (5V RISING / FALLING EDGES RESET)
QR105 UN9213 (RESET)
IC 106 MN73039VSMS (DIGI. MEMO. CONTROL) (D/A, A/D CONVERTER)
IC106-㊵ STOP 1.9Vp-p (H)
IC106-① STOP 3.8Vp-p (H)
IC 107 LC3664NML-12 MB8464A15LPF MN4464S08LL (S-RAM)
QR101 UN9210 (MEMORY: OFF)
IC 112 TC7S08F (BLK MIX)
Q106 2SD2216 (BLK AMP)
X101 VSX0412
X102 VSX0432
AD 5V
CAM 5V
3V-5V
B201 (TO PROCESS)
1 Z.E- B301-1
2 Z.E+ B301-2
3 CAM CLOCK B301-3
4 B301-4
5 ZOOM ENC B301-5
6 HCLR B301-6
7 VD B301-7
8 VMD2 B301-8
9 VMD3 B301-9
10 OB CONT B301-10
11 VREF 1.8V B301-11
12 CDS-Y B301-12
13 GND (ANALOG) B301-13
14 GND (ANALOG) B301-14
15 AD 5V B301-15
16 AD 5V B301-16
17 CAM 5V B301-17
18 CAM 5V B301-18
19 GND (DIGITAL) B301-19
20 GND (DIGITAL) B301-20
21 VREF 3.5V B301-21
22 REF 1.5V B301-22
23 AGC CONT. B301-23
24 DCP B301-24
25 VMD1 B301-25
26 HD B301-26
27 ADCLK B301-27
28 FCK B301-28
29 B301-29
30 B301-30
31 ØRB B301-31
32 OEI B301-32
B202 (TO PROCESS)
1 VREF 3 B302-1
2 MF N B302-2
3 F/I 1 B302-3
4 F/I SW B302-4
5 AF LOCK B302-5
6 DZ ⓛ B302-6
7 WIDE B302-7
8 MEMO B302-8
9 HUE B302-9
10 MODE B302-10
11 DIGI. ON/OFF B302-11
12 CBO B302-12
13 CGO B302-13
14 D.M. CLOCK B302-14
15 CDS GAIN B302-15
16 VD EVF B302-16
17 PEDE B302-17
18 SIO B302-18
19 CRO B302-19
20 Y MIX B302-20
21 SW B302-21
22 DIN B302-22
23 BLKZ B302-23
24 TELE B302-24
25 VREF 1 B302-25
26 WHD B302-26
27 PWM B302-27
28 F/I 2 B302-28
29 F/I 0 B302-29
30 MF F B302-30
17
18
19
20
21
22
23
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25
26
27
28
29

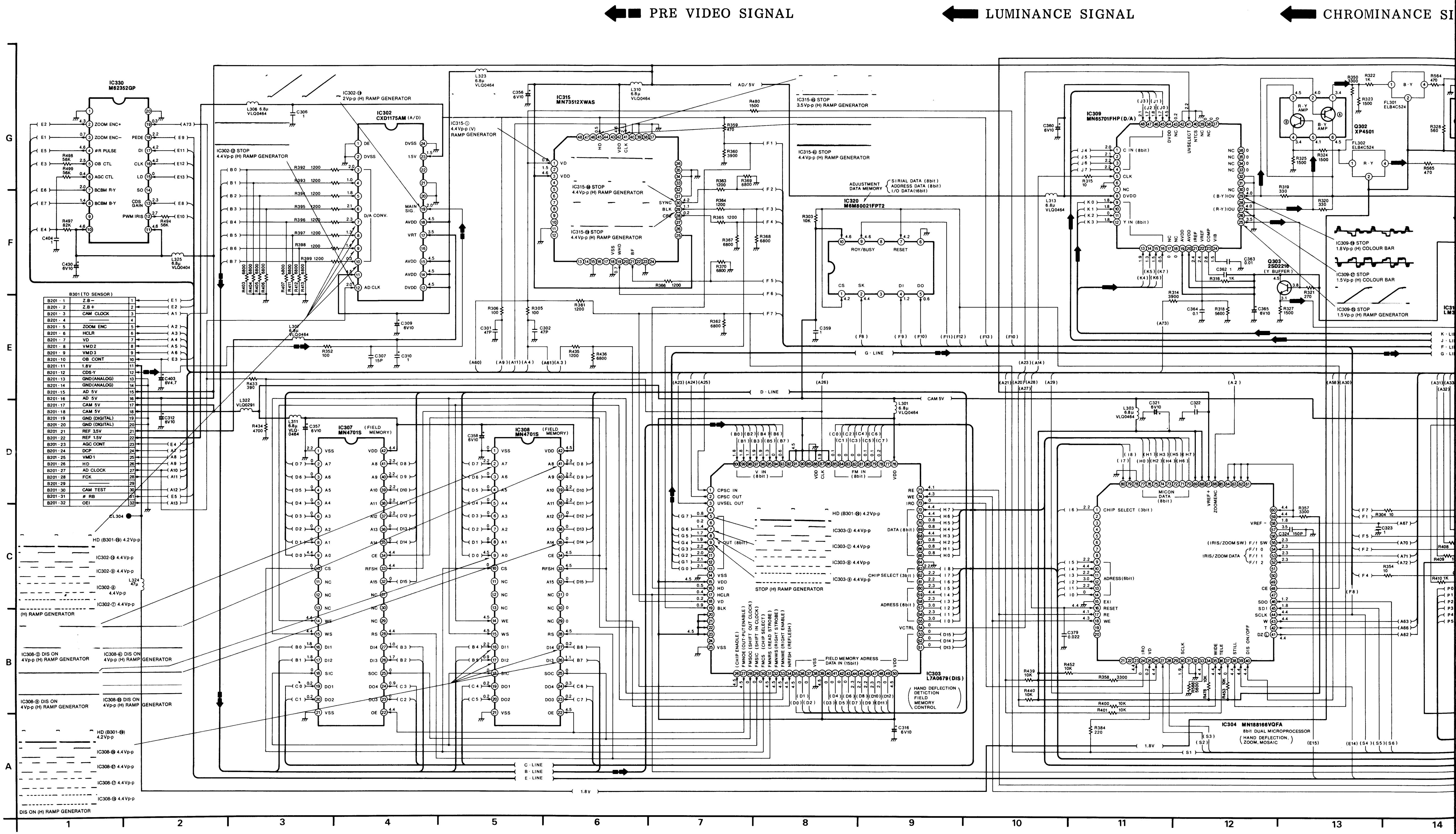
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

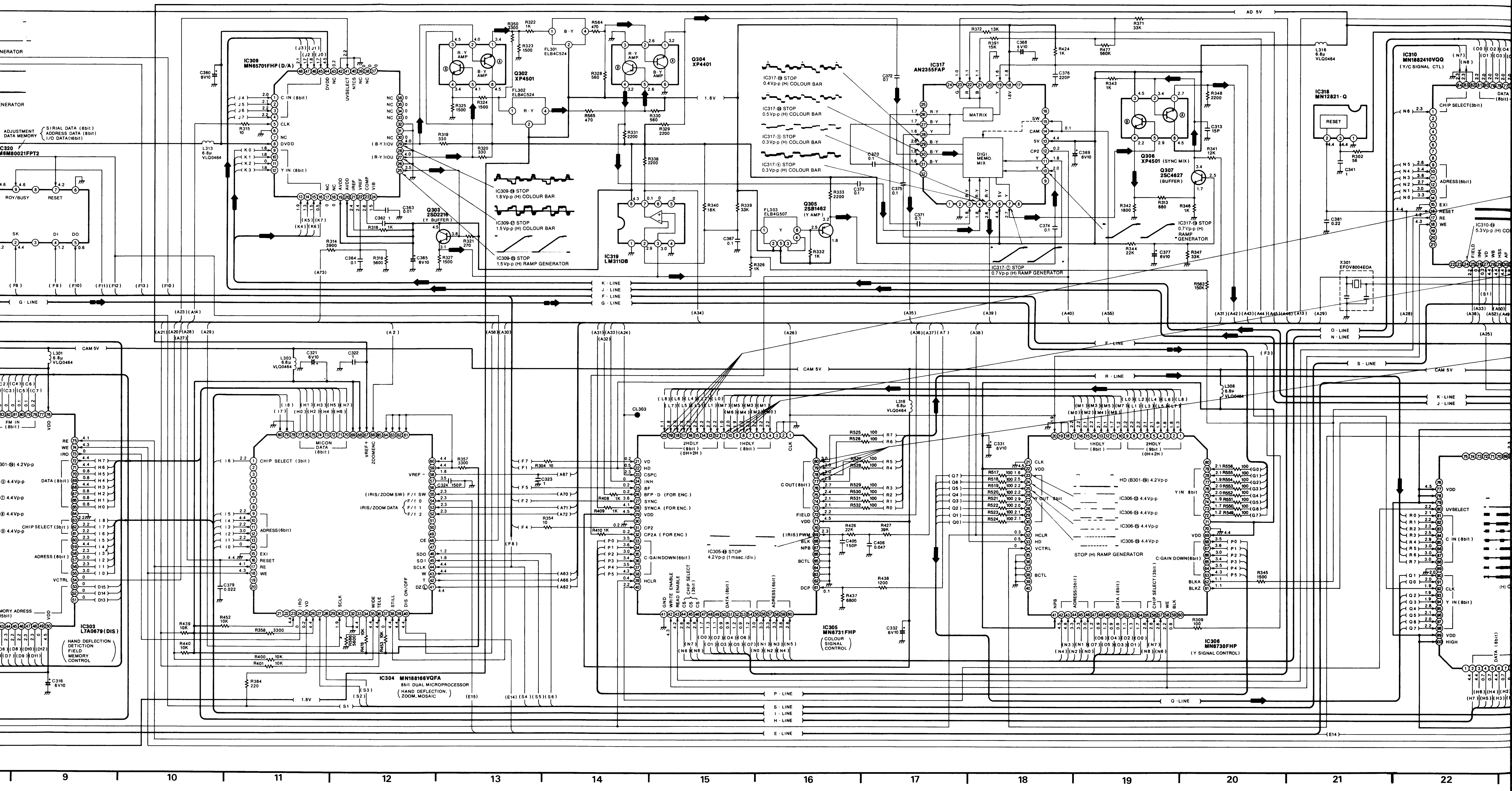
NOTE: (H) MEANS H • RATE
(V) MEANS V • RATE

Next Page: PROCESS Section

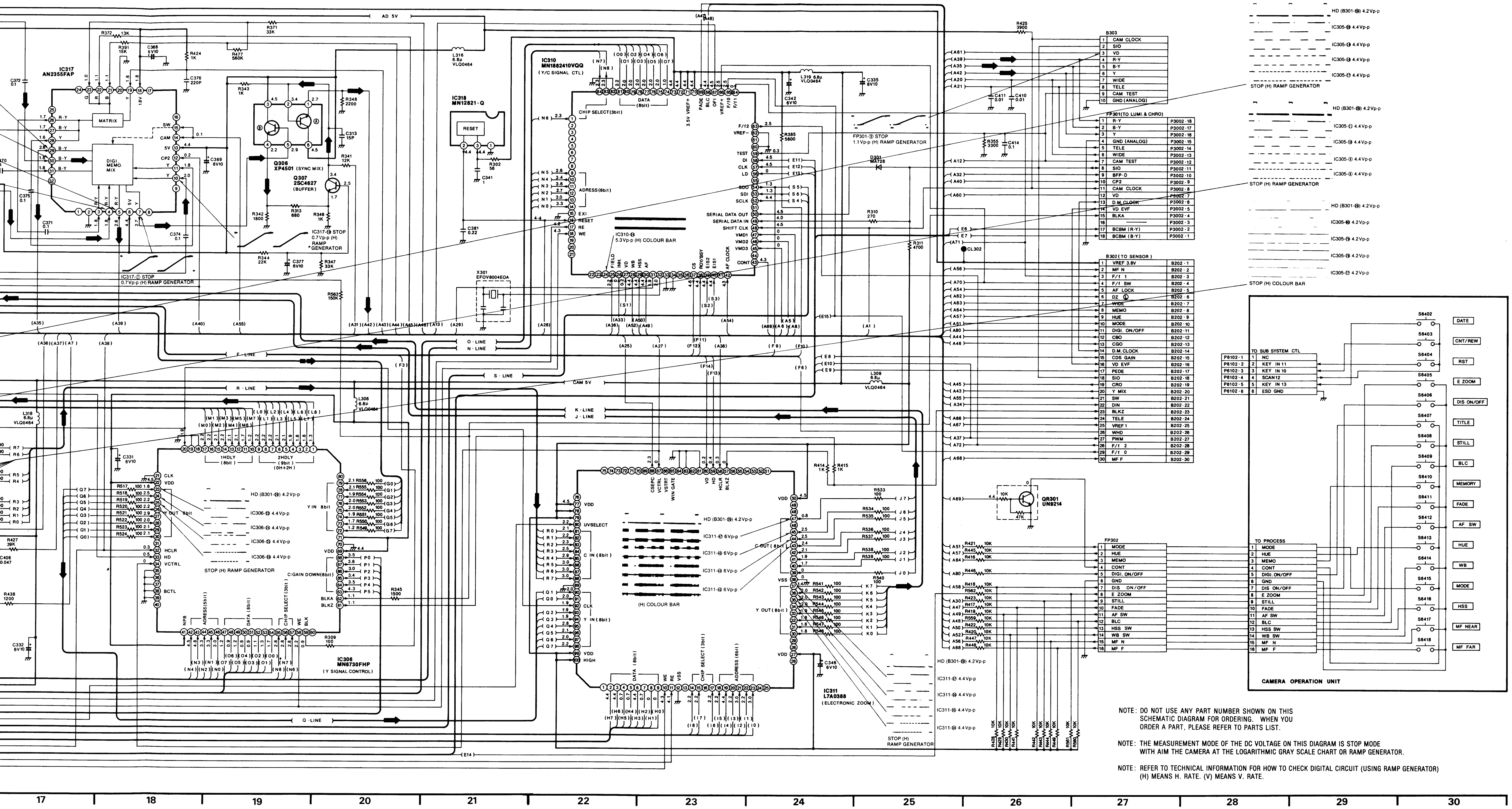
3-11. PROCESS SCHEMATIC DIAGRAM


PRE VIDEO SIGNAL
LUMINANCE SIGNAL
CHROMINANCE SI
IC330 M62352GP
ZOOM ENC+
ZOOM ENC−
ØR PULSE
OB CTL
AGC CTL
BCBM R-Y
BCBM B-Y
PEDE
CLK
LD
SO
CDS GAIN
PWM IRIS
B301 (TO SENSOR)
IC302 CXD1175AM (A/D)
D/A CONV.
AD CLK
IC315 MN73512XWAS
IC315-① 4.4Vp-p (V) RAMP GENERATOR
IC302-⑪ 2Vp-p (H) RAMP GENERATOR
IC302-⑪ STOP 4.4Vp-p (H) RAMP GENERATOR
IC315-⑩ STOP 4.4Vp-p (H) RAMP GENERATOR
IC315-⑬ STOP 4.4Vp-p (H) RAMP GENERATOR
IC315-⑯ STOP 3.5Vp-p (H) RAMP GENERATOR
IC315-⑥ STOP 4.4Vp-p (H) RAMP GENERATOR
IC320 M6M80021FPT2
ADJUSTMENT DATA MEMORY
SIRIAL DATA (8bit)
ADDRESS DATA (8bit)
I/O DATA (16bit)
IC309 MN65701FHP (D/A)
Q302 XP4501
R-Y AMP
B-Y AMP
Q303 2SD2216 (Y BUFFER)
IC309-⑩ STOP 1.8Vp-p (H) COLOUR BAR
IC309-⑫ STOP 1.5Vp-p (H) COLOUR BAR
IC309-⑮ STOP 1.5Vp-p (H) RAMP GENERATOR
IC307 MN4701S (FIELD MEMORY)
IC308 MN4701S (FIELD MEMORY)
IC303 L7A0679 (DIS)
(HAND DEFLECTION DETECTION FIELD MEMORY CONTROL)
V IN (8bit)
FM IN (8bit)
OUT (8bit)
DATA (8bit)
CHIP SELECT (3bit)
ADRESS (6bit)
FIELD MEMORY ADRESS DATA IN (15bit)
STOP (H) RAMP GENERATOR
HD (B301-⑬) 4.2Vp-p
IC304 MN188166VQFA
8bit DUAL MICROPROCESSOR
(HAND DEFLECTION, ZOOM, MOSAIC)
MICON DATA (8bit)
CHIP SELECT (3bit)
ADRESS(6bit)
IC306-② DIS ON 4Vp-p (H) RAMP GENERATOR
IC308-⑥ DIS ON 4Vp-p (H) RAMP GENERATOR
DIS ON (H) RAMP GENERATOR
C-LINE
B-LINE
E-LINE
D-LINE
G-LINE
1.8V
CAM 5V
AD/5V

LUMINANCE SIGNAL   CHROMINANCE SIGNAL



IC309 MN65701FHP (D/A)
Q302 XP4501
R-Y AMP
B-Y AMP
FL301 ELB4C524
FL302 ELB4C524
Q304 XP4401
Q303 2SD2216 (Y BUFFER)
IC319 LM311DB
IC317 AN2355FAP
MATRIX
DIGI. MEMO. MIX
IC317-⑳ STOP 0.4Vp-p (H) COLOUR BAR
IC317-㉖ STOP 0.5Vp-p (H) COLOUR BAR
IC317-③ STOP 0.3Vp-p (H) COLOUR BAR
IC317-④ STOP 0.3Vp-p (H) COLOUR BAR
IC309-㉙ STOP 1.8Vp-p (H) COLOUR BAR
IC309-㉗ STOP 1.5Vp-p (H) COLOUR BAR
IC309-㉕ STOP 1.5Vp-p (H) RAMP GENERATOR
IC317-⑦ STOP 0.7Vp-p (H) RAMP GENERATOR
IC317-⑩ STOP 0.7Vp-p (H) RAMP GENERATOR
FL303 ELB4G507
Q305 2SB1462 (Y AMP)
Q306 XP4501 (SYNC MIX)
Q307 2SC4627 (BUFFER)
IC318 MN12821-Q
RESET
X301 EFOV8004EOA
IC310 MN1882410VQQ (Y/C SIGNAL CTL)
CHIP SELECT (3bit)
ADRESS (8bit)
AD 5V
1.8V
K-LINE
J-LINE
F-LINE
G-LINE
O-LINE
N-LINE
E-LINE
R-LINE
S-LINE
CAM 5V
P-LINE
I-LINE
H-LINE
Q-LINE
E-LINE
IC320 M6M80021FPT2
ADJUSTMENT DATA MEMORY
SIRIAL DATA (8bit)
ADDRESS DATA (8bit)
I/O DATA (16bit)
RDY/BUSY
RESET
IC303 L7A0679 (DIS)
HAND DEFLECTION DETECTION FIELD MEMORY CONTROL
IC304 MN188166VQFA
8bit DUAL MICROPROCESSOR
(HAND DEFLECTION, ZOOM, MOSAIC)
MICON DATA (8bit)
CHIP SELECT (3bit)
ADRESS (6bit)
(IRIS/ZOOM SW) F/1 SW
IRIS/ZOOM DATA
IC305 MN6731FHP (COLOUR SIGNAL CONTROL)
2HDLY (9bit) (0H+2H)
1HDLY (8bit)
C OUT (8bit)
C GAIN DOWN (6bit)
IC305-㉑ STOP 4.2Vp-p (1msec./div.)
IC306 MN6730FHP (Y SIGNAL CONTROL)
Y OUT 8bit
Y IN 8bit
HD (B301-⑬) 4.2Vp-p
IC306-⑪ 4.4Vp-p
IC306-⑫ 4.4Vp-p
IC306-⑬ 4.4Vp-p
IC306-⑭ 4.4Vp-p
STOP (H) RAMP GENERATOR
UVSELECT
C IN (8bit)
Y IN (8bit)
9
10
11
12
13
14
15
16
17
18
19
20
21
22

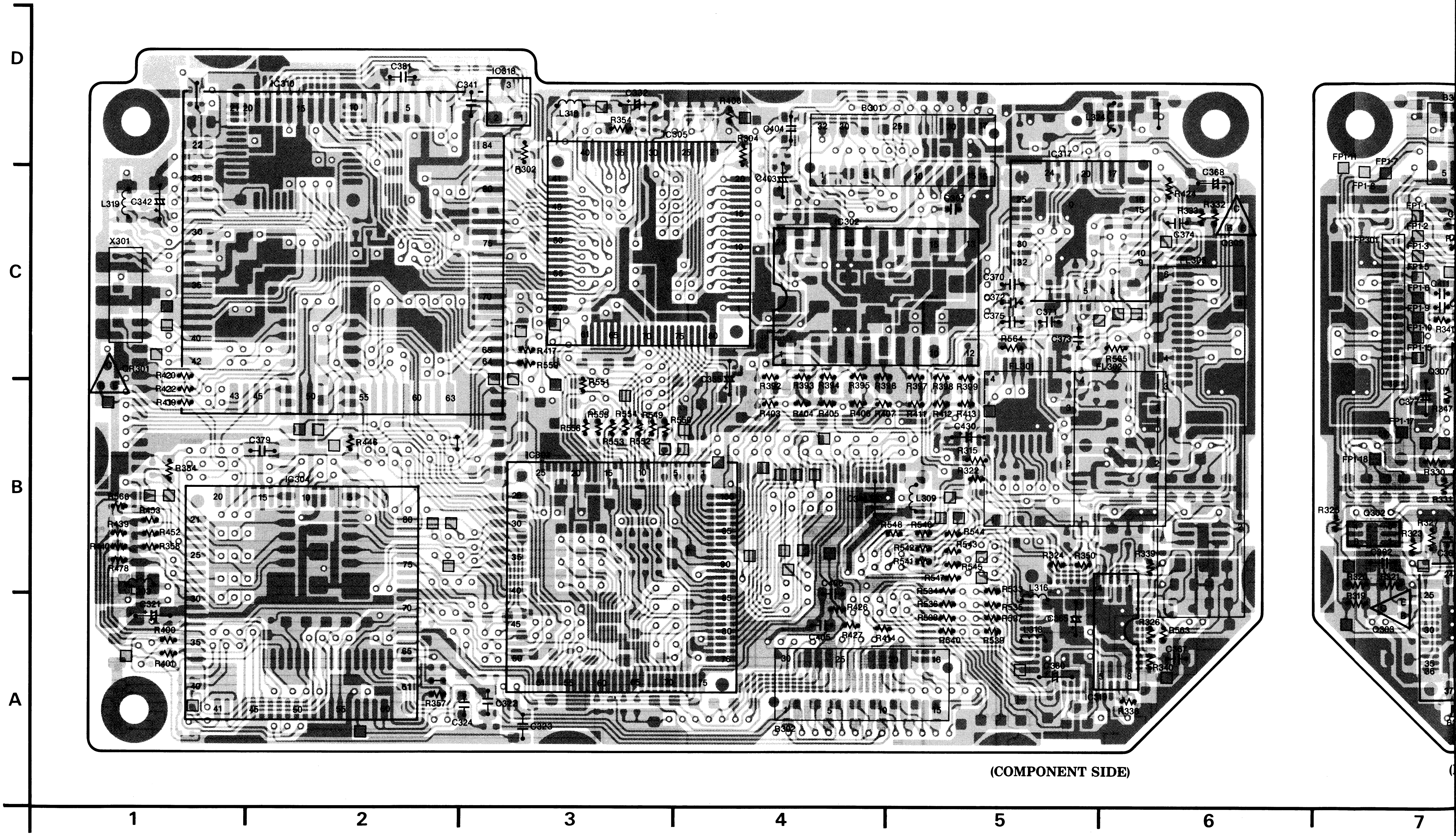

IC317 AN2355FAP
MATRIX
DIGI. MEMO. MIX
Q306 XP4501 (SYNC MIX)
Q307 2SC4627 (BUFFER)
IC317-⑮ STOP 0.7Vp-p (H) RAMP GENERATOR
IC317-⑦ STOP 0.7Vp-p (H) RAMP GENERATOR
AD 5V
IC318 MN12821-Q
RESET
X301 EFOV8004E0A
IC310 MN1882410VQQ (Y/C SIGNAL CTL)
CHIP SELECT(3bit)
ADRESS(6bit)
DATA (8bit)
SERIAL DATA OUT
SERIAL DATA IN
SHIFT CLK
IC310-⑬ 5.3Vp-p (H) COLOUR BAR
FP301-⑤ STOP 1.1Vp-p (H) RAMP GENERATOR
D301 MA728
QR301 UN9214
CL302
B303
CAM CLOCK
SIO
VD
R-Y
B-Y
Y
WIDE
TELE
CAM TEST
GND (ANALOG)
FP301(TO LUMI. & CHRO)
B302 (TO SENSOR)
STOP (H) RAMP GENERATOR
STOP (H) COLOUR BAR
HD (B301-⑬) 4.2Vp-p
F-LINE
R-LINE
S-LINE
O-LINE
N-LINE
CAM 5V
K-LINE
J-LINE
Q-LINE
IC306 MN6730FHP (Y SIGNAL CONTROL)
1HDLY (8bit)
2HDLY (9bit) (0H+2H)
Y OUT 8bit
Y IN 8bit
C-GAIN DOWN(6bit)
STOP (H) RAMP GENERATOR
IC311 L7A0388 (ELECTRONIC ZOOM)
UVSELECT
C IN (8bit)
Y IN (8bit)
C OUT (8bit)
Y OUT (8bit)
(H) COLOUR BAR
STOP (H) RAMP GENERATOR
TO SUB SYSTEM CTL
NC
KEY IN 11
KEY IN 10
SCAN12
KEY IN 13
ESD GND
FP302
TO PROCESS
MODE
HUE
MEMO
CONT
DIGI. ON/OFF
GND
DIS ON/OFF
E ZOOM
STILL
FADE
AF SW
BLC
HSS SW
WB SW
MF N
MF F
CAMERA OPERATION UNIT
DATE
CNT/REW
RST
E ZOOM
DIS ON/OFF
TITLE
STILL
BLC
MEMORY
FADE
AF SW
HUE
WB
MODE
HSS
MF NEAR
MF FAR
17
18
19
20
21
22
23
24
25
26
27
28
29
30

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

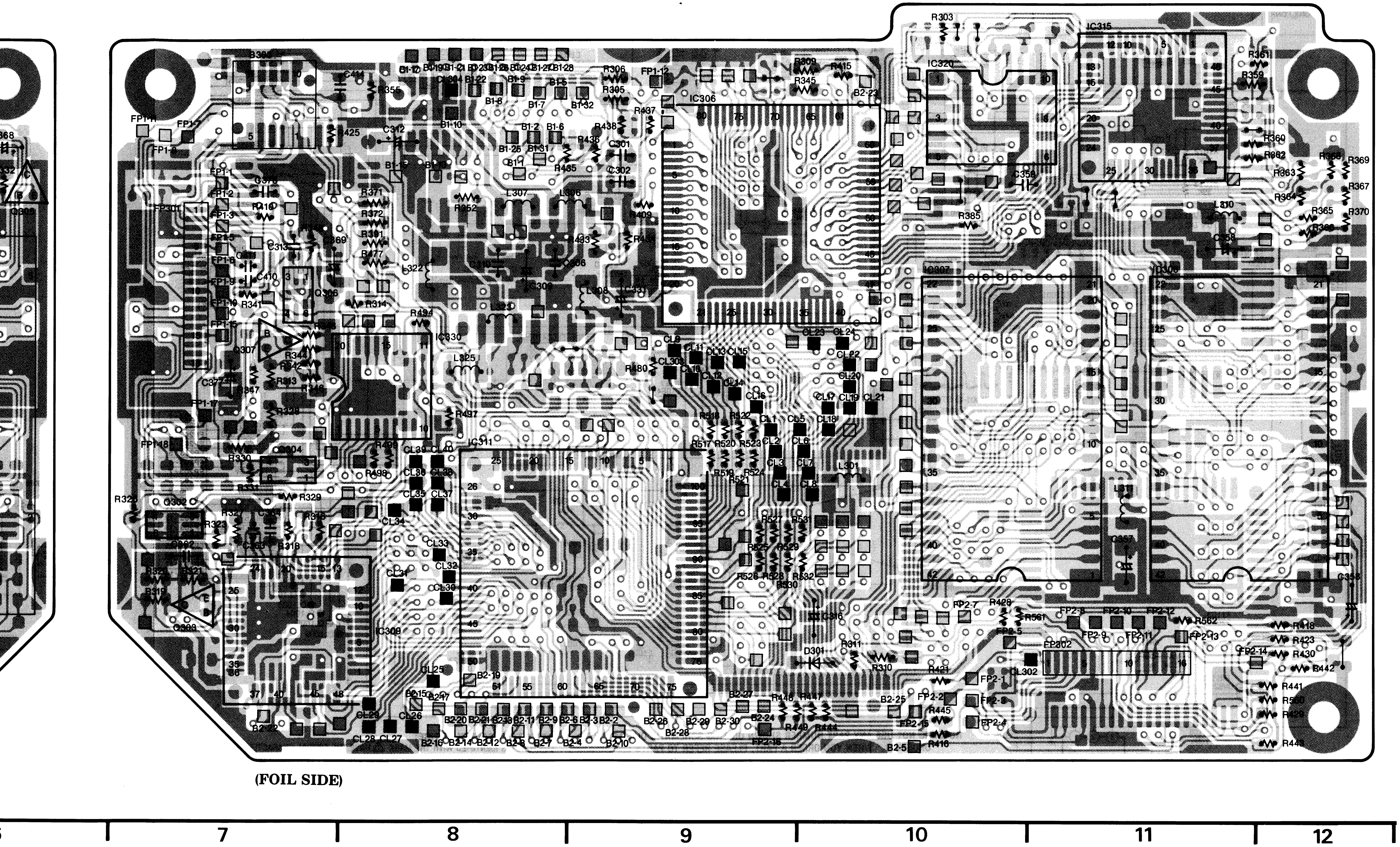
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART OR RAMP GENERATOR.

NOTE: REFER TO TECHNICAL INFORMATION FOR HOW TO CHECK DIGITAL CIRCUIT (USING RAMP GENERATOR) (H) MEANS H. RATE. (V) MEANS V. RATE.

3-12. PROCESS C.B.A. (VEP23127A)


D
C
B
A
1
2
3
4
5
6
7
IC310
IC318
C381
C341
L319
C342
X301
R420
R422
R439
C379
R446
R354
IC304
R466
R453
R439
R452
R358
R440
R478
C321
R400
R400
R357
C324
C322
C323
L318
R354
C332
R408
IC305
R304
R302
R417
R559
R551
R556
R555
R554
R549
R557
R553
R552
IC303
C404
C403
BC301
IC302
IC317
C368
R424
R332
R333
C374
Q306
FL306
C370
C372
C375
C371
C373
R564
R565
FL301
FL302
R392
R393
R394
R395
R396
R397
R398
R399
R403
R404
R405
R406
R407
R411
R412
R413
C430
R315
R322
L309
R548
R546
R544
R543
R542
R541
R545
R547
R534
R533
R536
R535
R538
R537
R540
R539
R426
R427
R414
L316
R324
R350
R339
R326
R563
C387
R340
C380
R336
B302
FP1-11
FP1-7
FP1-8
FP1-1
FP1-2
FP301
FP1-3
FP1-5
FP1-6
FP1-9
FP1-10
FP1-15
FP1-17
FP1-18
R341
Q307
C377
R347
R330
R325
Q302
R327
R323
R321
R319
C388

(COMPONENT SIDE)

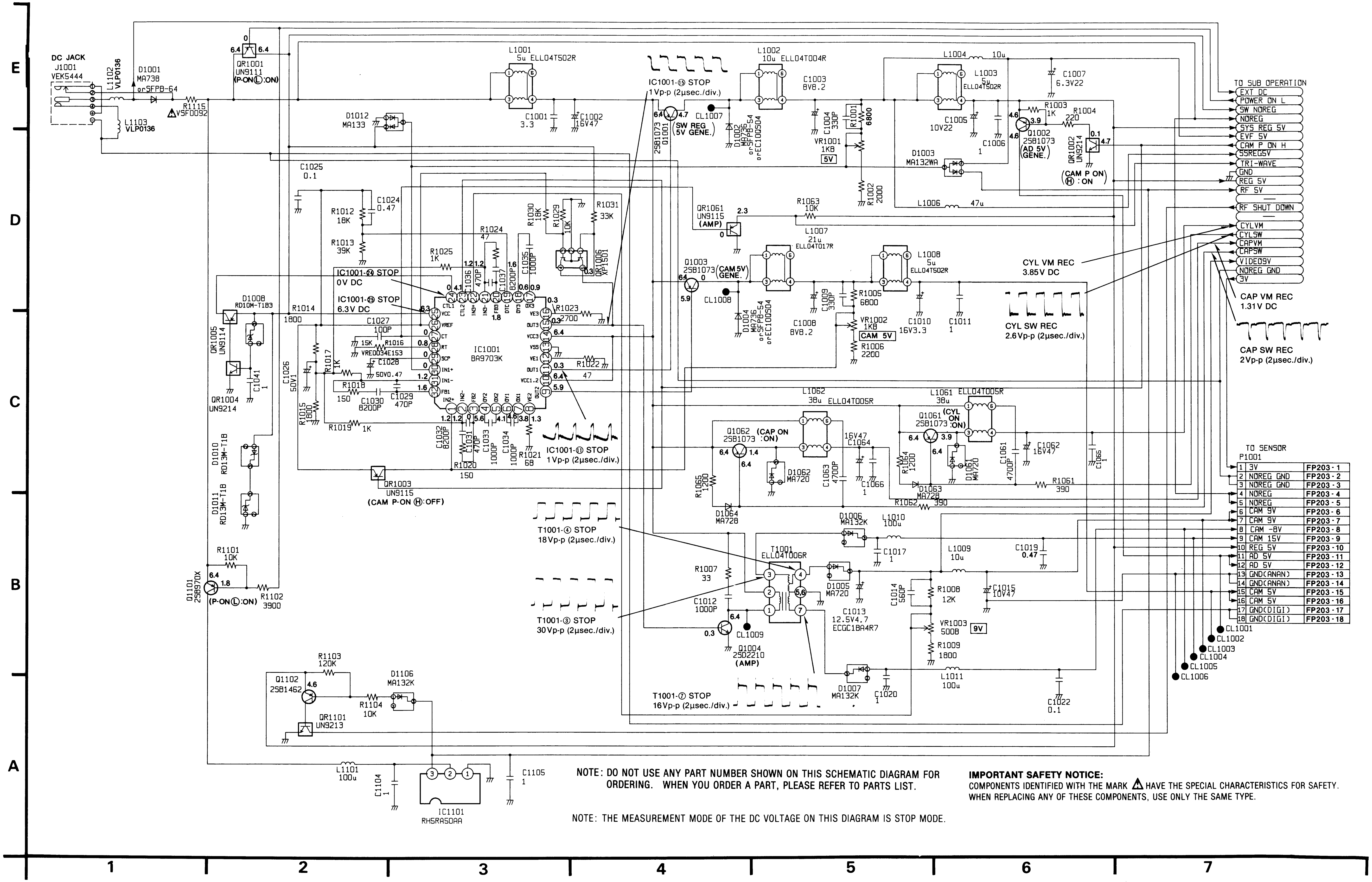

IC306
IC311
IC309
IC330
IC315
IC320
IC307
IC308
FP301
FP302
B303
Q302
Q303
Q304
Q306
Q307
D301
L301
L307
L310
L311
7
8
9
10
11
12

(FOIL SIDE)

PROCESS C.B.A.	
Transistor	
Q302	B-7 Ⓕ
Q303	A-7 Ⓕ
Q304	B-7 Ⓕ
Q305	C-6 ©
Q306	C-7 Ⓕ
Q307	C-7 Ⓕ
Transistor & Resistor	
QR301	C-1 ©
Integrated Circuit	
IC302	C-4 ©
IC303	B-3 ©
IC304	B-2 ©
IC305	D-3 ©
IC306	D-9 Ⓕ
IC307	C-10 Ⓕ
IC308	C-11 Ⓕ
IC309	A-8 Ⓕ
IC310	D-2 ©
IC311	B-8 Ⓕ
IC315	D-11 Ⓕ
IC317	D-5 ©
IC318	D-3 ©
IC319	A-6 ©
IC320	D-10 Ⓕ
IC330	C-8 Ⓕ
Test Point	
CL1	B-9 Ⓕ
CL2	B-9 Ⓕ
CL3	B-9 Ⓕ
CL4	B-9 Ⓕ
CL5	B-10 Ⓕ
CL6	B-10 Ⓕ
CL7	B-10 Ⓕ
CL8	B-10 Ⓕ
CL9	C-9 Ⓕ
CL10	B-9 Ⓕ
CL11	C-9 Ⓕ
CL12	B-9 Ⓕ
CL13	C-9 Ⓕ
CL14	B-9 Ⓕ
CL15	C-9 Ⓕ
CL16	B-9 Ⓕ
CL17	B-10 Ⓕ
CL18	B-10 Ⓕ
CL19	B-10 Ⓕ
CL20	B-10 Ⓕ
CL21	B-10 Ⓕ
CL22	C-10 Ⓕ
CL23	C-10 Ⓕ
CL24	C-10 Ⓕ
CL25	A-8 Ⓕ
CL26	A-8 Ⓕ
CL27	A-8 Ⓕ
CL28	A-8 Ⓕ
CL29	A-8 Ⓕ
CL30	A-8 Ⓕ
CL31	A-8 Ⓕ
CL32	A-8 Ⓕ
CL33	A-8 Ⓕ
CL34	B-8 Ⓕ
CL35	B-8 Ⓕ
CL36	B-8 Ⓕ
CL37	B-8 Ⓕ
CL38	B-8 Ⓕ
CL39	B-8 Ⓕ
CL40	B-8 Ⓕ
CL302	A-11 Ⓕ
CL303	B-9 Ⓕ
CL304	D-8 Ⓕ
Connector	
B301	D-4 ©
B302	A-4 ©
B303	D-7 Ⓕ
FP301	C-7 Ⓕ
FP302	A-11 Ⓕ

ADDRESS INFORMATION
© ... COMPONENT SIDE
Ⓕ ... FOIL SIDE

3-13. POWER SCHEMATIC DIAGRAM

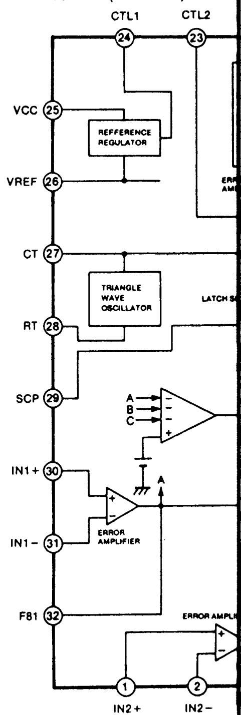

E
D
C
B
A
1
2
3
4
5
6
7
DC JACK
J1001
VEK5444
L1102 VLP0136
L1103 VLP0136
D1001 MA738 orSFPB-64
R1115 VSF0092
QR1001 UN9111 (P-ON Ⓛ:ON)
D1012 MA133
L1001 5u ELL04T502R
C1001 3.3
C1002 16V47
IC1001-⑲ STOP 1Vp-p (2µsec./div.)
Q1001 2SB1073 (SW REG 5V GENE.)
CL1007
D1002 MA736 orSFPB-54 orEC10QS04
L1002 10u ELL04T004R
C1003 8V8.2
C1004 330P
R1001 6800
VR1001 1KB
5V
R1002 2000
L1004 10u
L1003 5u ELL04T502R
C1005 10V22
C1006 1
C1007 6.3V22
D1003 MA132WA
R1003 1K
R1004 220
Q1002 2SB1073 (AD 5V GENE.)
QR1002 UN9214 (CAM P ON Ⓗ:ON)
L1006 47u
C1025 0.1
C1024 0.47
R1012 18K
R1013 39K
R1024 47
R1025 1K
R1030 18K
R1029 10K
R1031 33K
QR1006 XP1501
C1035 1000P
C1036 470P
C1037 8200P
IC1001-㉔ STOP 0V DC
IC1001-㉓ STOP 6.3V DC
IC1001 BA9703K
R1023 2700
R1022 47
D1008 RD10M-T1B3
R1014 1800
C1027 100P
R1016 15K
VRE0034E153
C1028 50V0.47
R1017 1K
R1018 150
C1030 8200P
C1029 470P
C1026 50V1
R1015 1800
R1019 1K
C1032 8200P
C1031 470P
C1033 1000P
C1034 1000P
R1020 150
R1021 68
IC1001-⑪ STOP 1Vp-p (2µsec./div.)
QR1005 UN9114
QR1004 UN9214
C1041 1
QR1003 UN9115 (CAM P-ON Ⓗ:OFF)
D1010 RD13M-T1B
D1011 RD13M-T1B
QR1061 UN9115 (AMP)
R1063 10K
L1007 21u ELL04T017R
Q1003 2SB1073 (CAM 5V GENE.)
CL1008
D1004 MA736 orSFPB-54 orEC10QS04
C1008 8V8.2
C1009 330P
R1005 6800
VR1002 1KB
CAM 5V
R1006 2200
L1008 5u ELL04T502R
C1010 16V3.3
C1011 1
CYL VM REC 3.85V DC
CYL SW REC 2.6Vp-p (2µsec./div.)
CAP VM REC 1.31V DC
CAP SW REC 2Vp-p (2µsec./div.)
L1062 38u ELL04T005R
L1061 ELL04T005R 38u
Q1062 2SB1073 (CAP ON :ON)
Q1061 2SB1073 (CYL ON :ON)
C1064 16V47
D1062 MA720
C1063 4700P
C1066 1
R1064 1200
D1063 MA728
D1061 MA720
C1061 4700P
C1062 16V47
C1065 1
R1061 390
R1062 390
R1065 1200
D1064 MA728
T1001-④ STOP 18Vp-p (2µsec./div.)
T1001-③ STOP 30Vp-p (2µsec./div.)
T1001-⑦ STOP 16Vp-p (2µsec./div.)
T1001 ELL04T006R
R1007 33
C1012 1000P
Q1004 2SD2210 (AMP)
CL1009
D1006 MA132K
L1010 100u
C1017 1
D1005 MA720
C1013 12.5V4.7 ECGC1BA4R7
C1014 560P
R1008 12K
VR1003 500B
9V
R1009 1800
L1009 10u
C1019 0.47
C1015 10V47
D1007 MA132K
C1020 1
L1011 100u
C1022 0.1
R1101 10K
Q1101 2SB970X (P-ON Ⓛ:ON)
R1102 3900
R1103 120K
Q1102 2SB1462
QR1101 UN9213
R1104 10K
D1106 MA132K
L1101 100u
C1104 1
C1105 1
IC1101 RHSRA50AA
TO SUB OPERATION
EXT DC
POWER ON L
SW NOREG
NOREG
SYS REG 5V
EVF 5V
CAM P ON H
SSREG5V
TRI-WAVE
GND
REG 5V
RF 5V
RF SHUT DOWN
CYLVM
CYLSW
CAPVM
CAPSW
VIDEO9V
NOREG GND
3V
TO SENSOR
P1001
1 3V FP203-1
2 NOREG GND FP203-2
3 NOREG GND FP203-3
4 NOREG FP203-4
5 NOREG FP203-5
6 CAM 9V FP203-6
7 CAM 9V FP203-7
8 CAM -8V FP203-8
9 CAM 15V FP203-9
10 REG 5V FP203-10
11 AD 5V FP203-11
12 AD 5V FP203-12
13 GND(ANAN) FP203-13
14 GND(ANAN) FP203-14
15 CAM 5V FP203-15
16 CAM 5V FP203-16
17 GND(DIGI) FP203-17
18 GND(DIGI) FP203-18
CL1001
CL1002
CL1003
CL1004
CL1005
CL1006

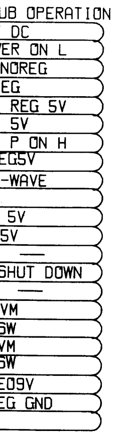
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

IC1001 (BA9703K)


CTL1
CTL2
VCC
VREF
CT
RT
SCP
IN1+
IN1-
FB1
IN2+
IN2-
REFERENCE REGULATOR
TRIANGLE WAVE OSCILLATOR
ERROR AMPLIFIER
LATCH


UB OPERATION
DC
ER ON L
NOREG
EG
REG 5V
5V
P ON H
EG5V
-WAVE
5V
5V
SHUT DOWN
VM
SW
VM
SW
E09V
EG GND

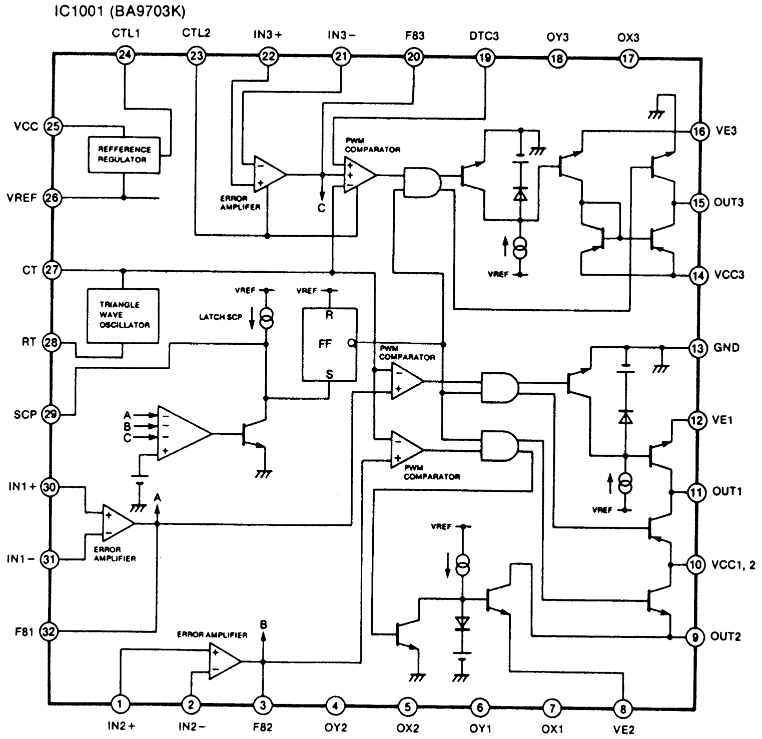
P VM REC
V DC

P SW REC
-p (2µsec./div.)

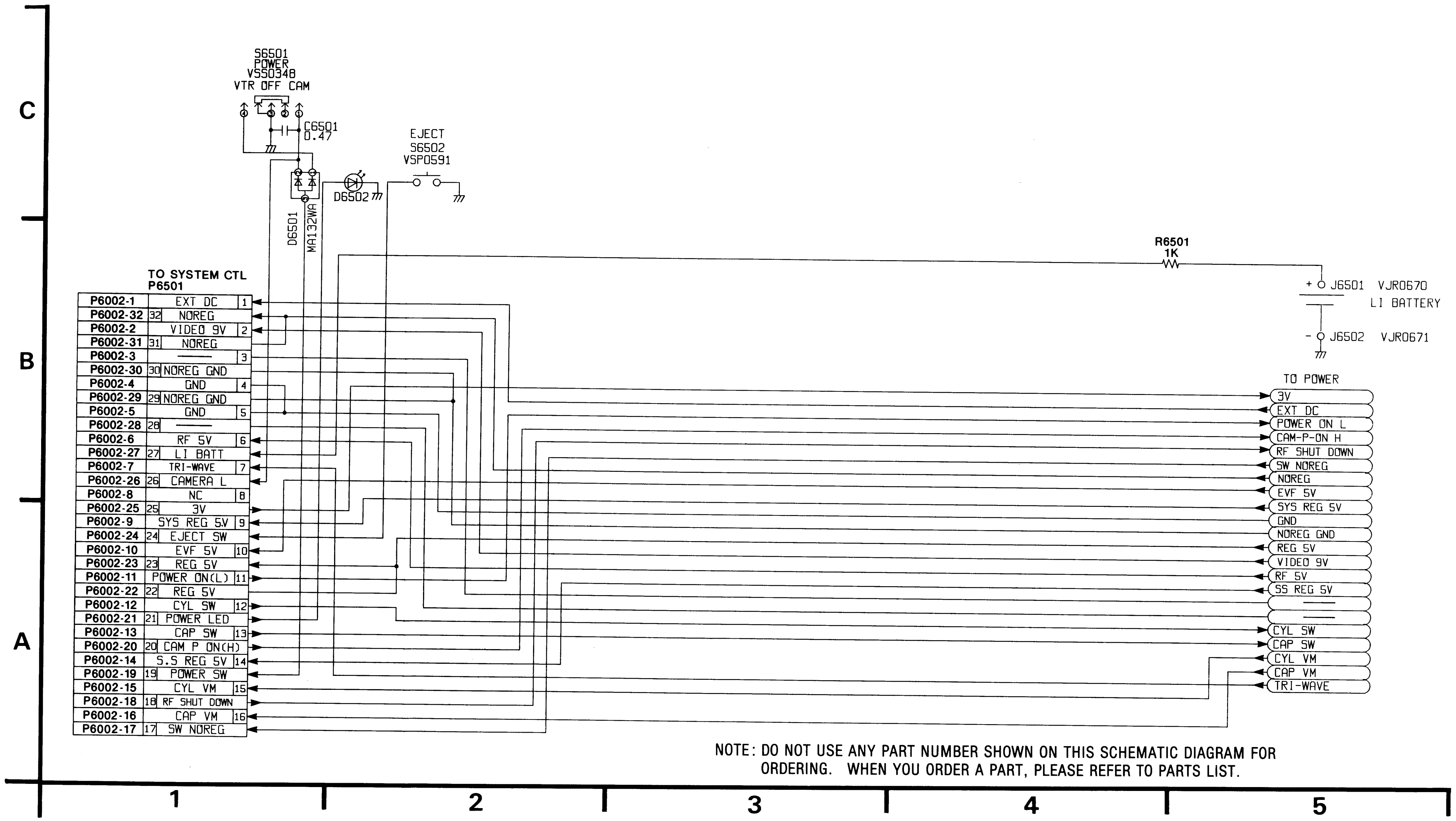
SENSOR
1

	FP203 - 1
REG GND	FP203 - 2
REG GND	FP203 - 3
REG	FP203 - 4
REG	FP203 - 5
M 9V	FP203 - 6
M 9V	FP203 - 7
M -8V	FP203 - 8
M 15V	FP203 - 9
G 5V	FP203 - 10
5V	FP203 - 11
5V	FP203 - 12
D(ANAN)	FP203 - 13
D(ANAN)	FP203 - 14
M 5V	FP203 - 15
M 5V	FP203 - 16
D(DIGI)	FP203 - 17
D(DIGI)	FP203 - 18

RISTICS FOR SAFETY.

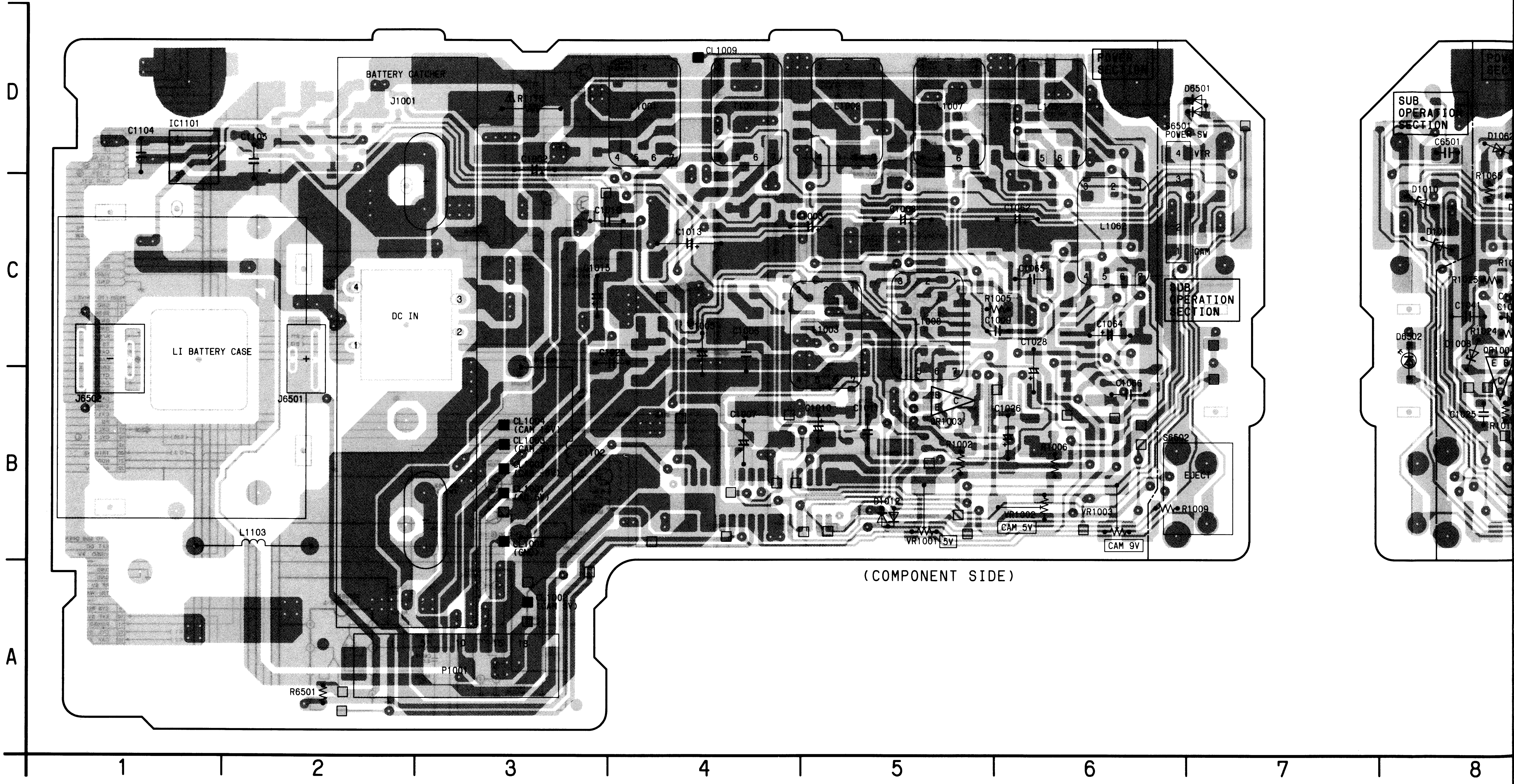

IC1001 (BA9703K)
CTL1
CTL2
IN3+
IN3−
F83
DTC3
OY3
OX3
VCC
VREF
CT
RT
SCP
IN1+
IN1−
F81
REFFERENCE REGULATOR
TRIANGLE WAVE OSCILLATOR
ERROR AMPLIFIER
PWM COMPARATOR
LATCH SCP
VREF
R
FF
Q
S
A
B
C
ERROR AMPLIFIER
VE3
OUT3
VCC3
GND
VE1
OUT1
VCC1, 2
OUT2
IN2+
IN2−
F82
OY2
OX2
OY1
OX1
VE2
24
23
22
21
20
19
18
17
25
26
27
28
29
30
31
32
16
15
14
13
12
11
10
9
1
2
3
4
5
6
7
8

3-14. SUB OPERATION SCHEMATIC DIAGRAM

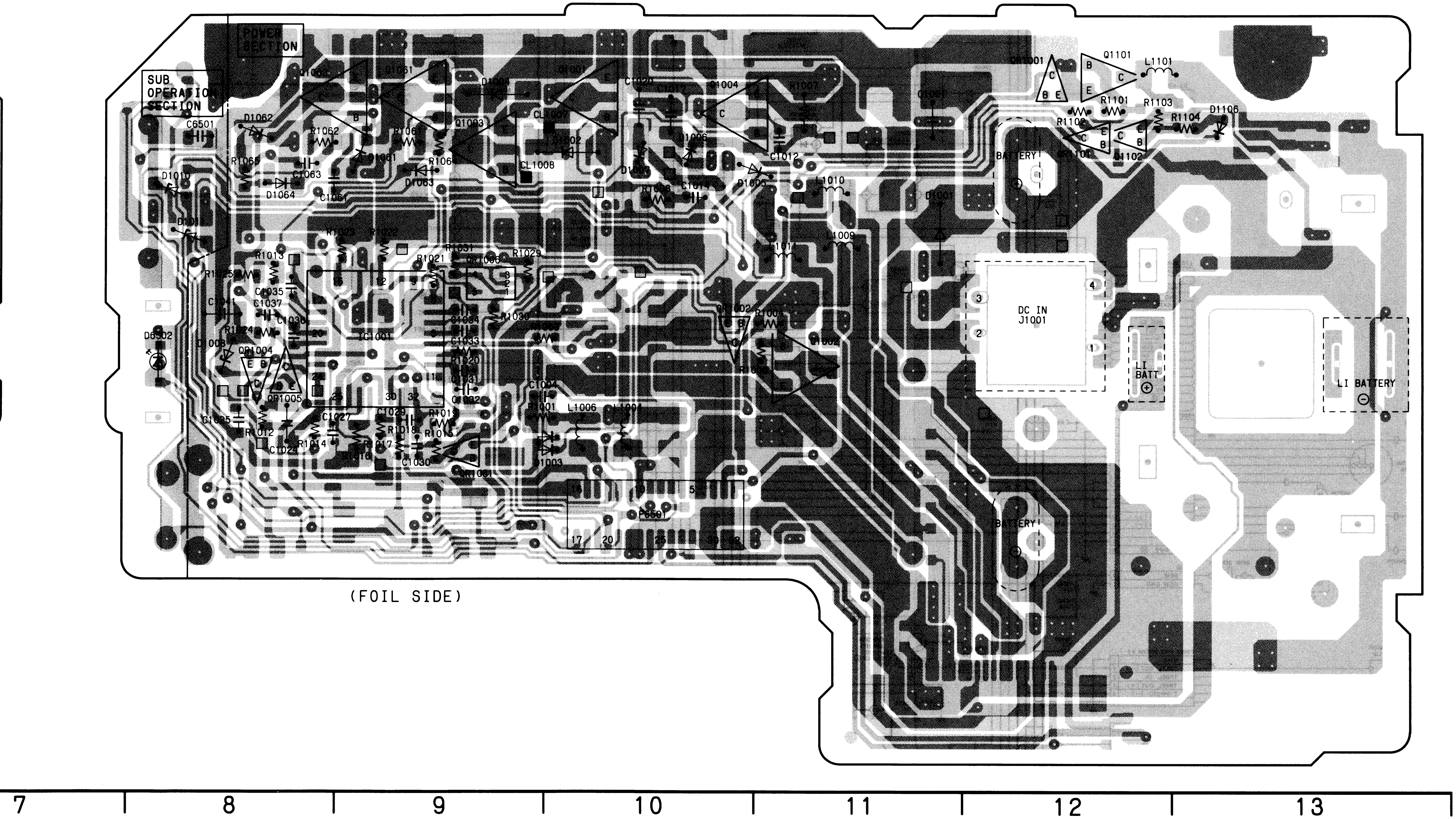

C
B
A
1
2
3
4
5
S6501
POWER
VSS0348
VTR OFF CAM
C6501
0.47
EJECT
S6502
VSP0591
D6502
D6501
MA132WA
R6501
1K
+ J6501 VJR0670
LI BATTERY
− J6502 VJR0671
TO SYSTEM CTL
P6501
P6002-1 EXT DC 1
P6002-32 32 NOREG
P6002-2 VIDEO 9V 2
P6002-31 31 NOREG
P6002-3 ——— 3
P6002-30 30 NOREG GND
P6002-4 GND 4
P6002-29 29 NOREG GND
P6002-5 GND 5
P6002-28 28 ———
P6002-6 RF 5V 6
P6002-27 27 LI BATT
P6002-7 TRI-WAVE 7
P6002-26 26 CAMERA L
P6002-8 NC 8
P6002-25 25 3V
P6002-9 SYS REG 5V 9
P6002-24 24 EJECT SW
P6002-10 EVF 5V 10
P6002-23 23 REG 5V
P6002-11 POWER ON(L) 11
P6002-22 22 REG 5V
P6002-12 CYL SW 12
P6002-21 21 POWER LED
P6002-13 CAP SW 13
P6002-20 20 CAM P ON(H)
P6002-14 S.S REG 5V 14
P6002-19 19 POWER SW
P6002-15 CYL VM 15
P6002-18 18 RF SHUT DOWN
P6002-16 CAP VM 16
P6002-17 17 SW NOREG
TO POWER
3V
EXT DC
POWER ON L
CAM-P-ON H
RF SHUT DOWN
SW NOREG
NOREG
EVF 5V
SYS REG 5V
GND
NOREG GND
REG 5V
VIDEO 9V
RF 5V
SS REG 5V
———
———
CYL SW
CAP SW
CYL VM
CAP VM
TRI-WAVE

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-15. POWER (POWER, SUB OPERATION Section) C.B.A. (VEP01491A)


D
C
B
A
1
2
3
4
5
6
7
8
CL1009
BATTERY CATCHER
J1001
POWER SECTION
D6501
S6501 POWER SW
SUB OPERATION SECTION
C6501
D1010
C1104
IC1101
C1105
L1001
L1007
L1063
C1013
C1065
R1005
C1009
C1028
C1064
C1066
C1026
C1027
C1010
L1003
L1008
VR1003
R1002
R1006
DC IN
LI BATTERY CASE
J6502
J6501
CL1004 (CAM 5V)
CL1003
S6502
EJECT
R1009
VR1002
CAM 5V
VR1003
CAM 9V
VR1001
5V
D1012
L1103
D6502
C1025
P1001
R6501
CL1005

(COMPONENT SIDE)


SUB OPERATION SECTION
POWER SECTION
C6501
D1062
D1010
R1065
D1064
C1063
C1061
R1062
D1061
Q1062
Q1061
R1061
R1064
D1063
Q1003
D1020
CL1007
D1002
CL1008
Q1001
C1020
Q1004
R1007
D1006
C1012
D1005
R1008
C1014
L1010
D1001
L1011
L1009
R1013
R1023
R1022
R1021
R1031
QR1006
R1029
R1025
C1035
C1037
C1041
C1036
R1024
D1008
QR1004
QR1005
IC1001
R1030
C1034
C1033
R1020
C1031
C1032
C1029
R1018
R1019
R1015
R1017
R1016
R1014
C1027
C1025
R1012
C1026
C1030
QR1061
C1004
R1001
L1006
L1004
D1003
QR1002
R1004
Q1002
P6501
17
20
25
30
32
DC IN
J1001
BATTERY
LI BATT
LI BATTERY
QR1001
Q1101
L1101
R1101
R1103
R1102
R1104
D1106
QR1101
Q1102
C1001
D6502
7
8
9
10
11
12
13

(FOIL SIDE)

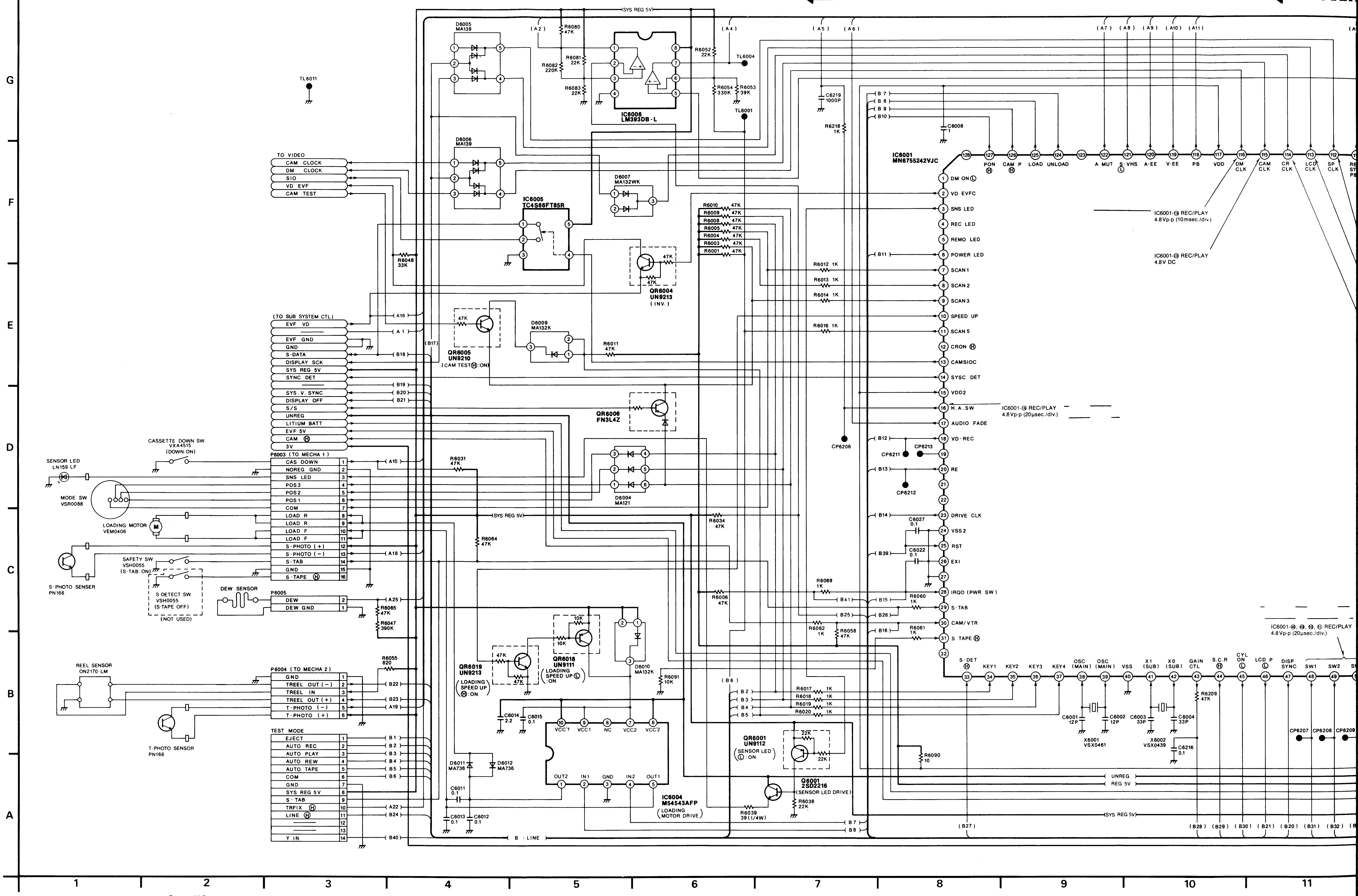
POWER C.B.A.	
Transistor	
Q1001	D-10 Ⓕ
Q1002	C-11 Ⓕ
Q1003	D-9 Ⓕ
Q1004	D-10 Ⓕ
Q1061	D-9 Ⓕ
Q1062	D-8 Ⓕ
Q1101	D-12 Ⓕ
Q1102	D-12 Ⓕ
Transistor & Resistor	
QR1001	D-12 Ⓕ
QR1002	C-10 Ⓕ
QR1003	B-5 Ⓒ
QR1004	C-8 Ⓕ
QR1005	B-8 Ⓕ
QR1006	C-9 Ⓕ
QR1061	B-9 Ⓕ
QR1101	D-12 Ⓕ
Integrated Circuit	
IC1001	C-9 Ⓕ
IC1101	D-1 Ⓒ
Test Point	
CL1001	B-3 Ⓒ
CL1002	A-3 Ⓒ
CL1003	B-3 Ⓒ
CL1004	B-3 Ⓒ
CL1005	B-3 Ⓒ
CL1006	B-3 Ⓒ
CL1007	D-10 Ⓕ
CL1008	C-9 Ⓕ
CL1009	D-4 Ⓒ
Adjustment	
VR1001	B-5 Ⓒ
VR1002	B-6 Ⓒ
VR1003	B-6 Ⓒ
Connector	
P1001	A-3 Ⓒ
P6501	B-10 Ⓕ

ADDRESS INFORMATION
Ⓒ... COMPONENT SIDE
Ⓕ... FOIL SIDE

3-16. SERVO & SYSTEM CONTROL SCHEMATIC DIAGRAM

CAPSTAN SERVO SPEED LOOP

CAPSTAN SERVO PHASE LOOP

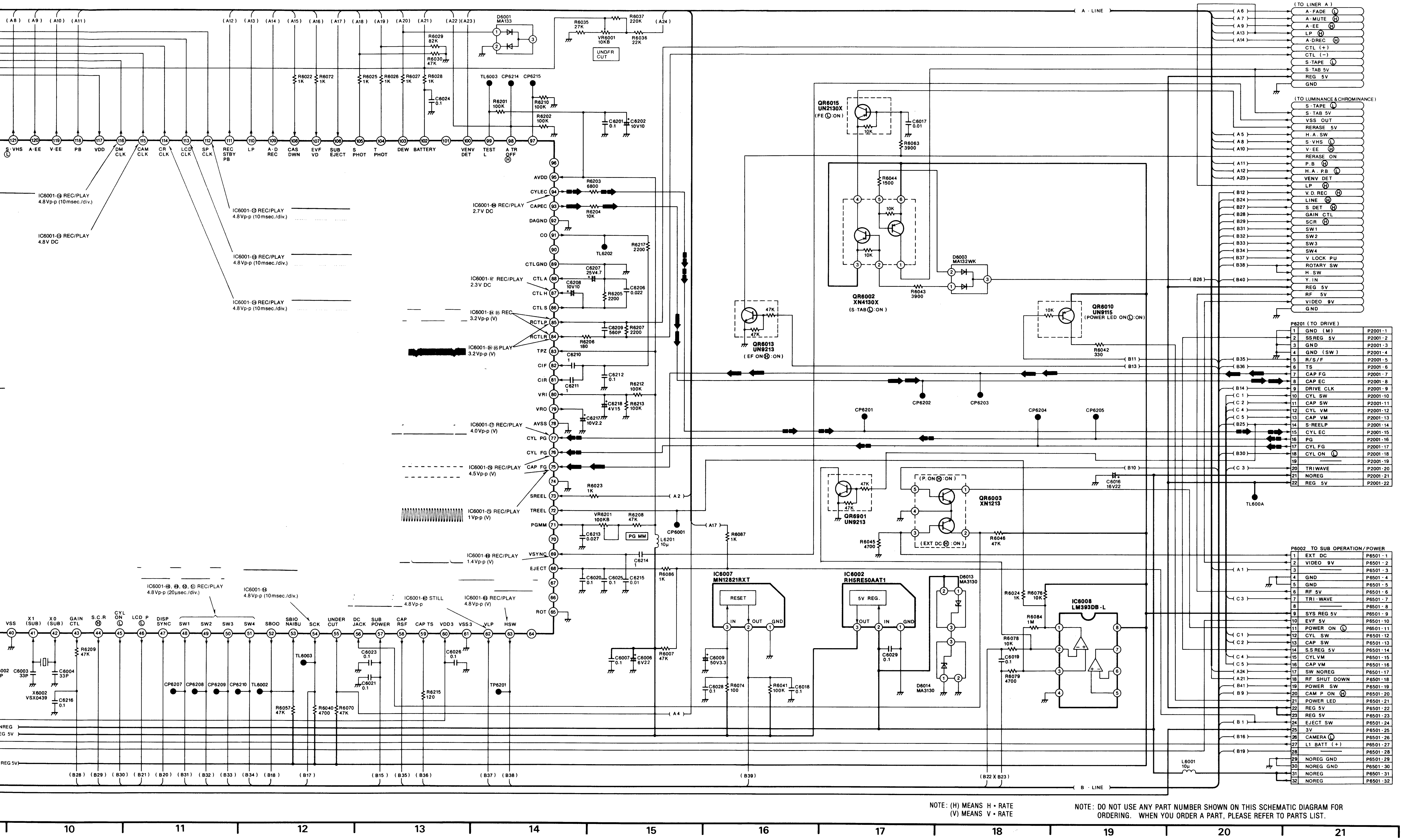


G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
SYS REG 5V
D6005 MA139
D6006 MA139
D6007 MA132WK
D6009 MA132K
D6004 MA121
D6010 MA132K
D6011 MA736
D6012 MA736
IC6006 LM393DB-L
IC6005 TC4S66FT85R
IC6004 M54543AFP (LOADING MOTOR DRIVE)
IC6001 MN6755242VJC
QR6004 UN9213 (INV.)
QR6005 UN9210 (CAM TEST Ⓗ:ON)
QR6006 FN3L4Z
QR6019 UN9213 (LOADING SPEED UP Ⓗ:ON)
QR6018 UN9111 (LOADING SPEED UP Ⓛ:ON)
QR6001 UN9112 (SENSOR LED Ⓛ:ON)
Q6001 2SD2216 (SENSOR LED DRIVE)
TL6011
TL6004
TL6001
CP6206
CP6211
CP6213
CP6212
CP6207
CP6208
CP6209
R6080 47K
R6081 22K
R6082 220K
R6083 22K
R6052 22K
R6054 330K
R6053 39K
C6219 1000P
R6218 1K
C6008 1
R6048 33K
R6010 47K
R6009 47K
R6008 47K
R6005 47K
R6004 47K
R6003 47K
R6001 47K
R6012 1K
R6013 1K
R6014 1K
R6016 1K
R6011 47K
R6031 47K
R6064 47K
R6034 47K
R6069 1K
R6006 47K
R6065 47K
R6047 390K
R6055 820
R6062 1K
R6058 47K
R6060 1K
R6061 1K
R6091 10K
R6017 1K
R6018 1K
R6019 1K
R6020 1K
R6090 10
R6039 39 (1/4W)
R6038 22K
R6209 47K
C6027 0.1
C6022 0.1
C6014 2.2
C6015 0.1
C6011 0.1
C6013 0.1
C6012 0.1
C6001 12P
C6002 12P
C6003 33P
C6004 33P
C6216 0.1
X6001 VSX0461
X6002 VSX0439
TO VIDEO
CAM CLOCK
DM CLOCK
SIO
VD EVF
CAM TEST
(TO SUB SYSTEM CTL)
EVF VD
EVF GND
GND
S·DATA
DISPLAY SCK
SYS REG 5V
SYNC DET
SYS V. SYNC
DISPLAY OFF
S/S
UNREG
LITIUM BATT
EVF 5V
CAM Ⓗ
3V
P6003 (TO MECHA 1)
CAS DOWN
NOREG GND
SNS LED
POS3
POS2
POS1
COM
LOAD R
LOAD R
LOAD F
LOAD F
S·PHOTO (+)
S·PHOTO (−)
S·TAB
GND
S·TAPE Ⓗ
P6005
DEW
DEW GND
P6004 (TO MECHA 2)
GND
TREEL OUT (−)
TREEL IN
TREEL OUT (+)
T·PHOTO (−)
T·PHOTO (+)
TEST MODE
EJECT
AUTO REC
AUTO PLAY
AUTO REW
AUTO TAPE
COM
GND
SYS REG 5V
S·TAB
TRFIX Ⓗ
LINE Ⓗ
Y IN
CASSETTE DOWN SW VXA4515 (DOWN:ON)
SENSOR LED LN159·LF
MODE SW VSR0088
LOADING MOTOR VEM0406
SAFETY SW VSH0055 (S·TAB:ON)
S·DETECT SW VSH0055 (S·TAPE OFF) (NOT USED)
DEW SENSOR
S·PHOTO SENSER PN166
REEL SENSOR ON2170·LM
T·PHOTO SENSOR PN166
B·LINE
DM ON Ⓛ
VD EVFC
SNS LED
REC LED
REMO LED
POWER LED
SCAN 1
SCAN 2
SCAN 3
SPEED UP
SCAN 5
CRON Ⓗ
CAMSIOC
SYSC DET
VDD2
H.A.SW
AUDIO FADE
VD·REC
RE
DRIVE CLK
VSS2
RST
EXI
IRQ0 (PWR SW)
S·TAB
CAM/VTR
S TAPE Ⓗ
S·DET Ⓗ
KEY1
KEY2
KEY3
KEY4
OSC (MAIN)
OSC (MAIN)
VSS
X1 (SUB)
X0 (SUB)
GAIN CTL
S.C.R Ⓗ
CYL ON Ⓛ
LCD P Ⓛ
DISP SYNC
SW1
SW2
PON Ⓗ
CAM P Ⓗ
LOAD
UNLOAD
A MUT
S·VHS Ⓛ
A·EE
V·EE
PB
VDD
DM CLK
CAM CLK
CR CLK
LCD CLK
SP CLK
UNREG
REG 5V
IC6001-⑮ REC/PLAY 4.8Vp-p (10msec./div.)
IC6001-⑮ REC/PLAY 4.8V DC
IC6001-⑯ REC/PLAY 4.8Vp-p (20μsec./div.)
IC6001-㊽, ㊾ REC/PLAY 4.8Vp-p (20μsec./div.)

Back Page: POWER Section

⬅■ CYLINDER SERVO SPEED LOOP

⬅■ CYLINDER SERVO PHASE LOOP


IC6001-⑳ REC/PLAY 4.8Vp-p (10msec./div.)
IC6001-⑮ REC/PLAY 4.8V DC
IC6001-⑭ REC/PLAY 4.8Vp-p (10msec./div.)
IC6001-⑬ REC/PLAY 4.8Vp-p (10msec./div.)
IC6001-⑫ REC/PLAY 4.8Vp-p (10msec./div.)
IC6001-⑭ REC/PLAY 2.7V DC
IC6001-⑰ REC/PLAY 2.3V DC
IC6001-⑭⑮ REC 3.2Vp-p (V)
IC6001-⑭⑮ PLAY 3.2Vp-p (V)
IC6001-⑦ REC/PLAY 4.0Vp-p (V)
IC6001-⑮ REC/PLAY 4.5Vp-p (V)
IC6001-② REC/PLAY 1Vp-p (V)
IC6001-⑲ REC/PLAY 1.4Vp-p (V)
IC6001-⑱, ⑲, ⑳, ㉑ REC/PLAY 4.8Vp-p (20μsec./div.)
IC6001-㉔ 4.8Vp-p (10msec./div.)
IC6001-㉒ STILL 4.8Vp-p
IC6001-㉓ REC/PLAY 4.8Vp-p (V)
S-VHS Ⓛ
A-EE
V-EE
PB
VDD
DM CLK
CAM CLK
CR CLK
LCD CLK
SP CLK
REC STBY PB
LP
A-D REC
CAS DWN
EVF VD
SUB EJECT
S PHOT
T PHOT
DEW
BATTERY
VENV DET
TEST L
A TR OFF Ⓗ
AVDD
CYLEC
CAPEC
DAGND
CO
CTLGND
CTL A
CTL H
CTL S
RCTLP
RCTLR
TPZ
CIF
CIR
VRI
VRO
AVSS
CYL PG
CYL FG
CAP FG
SREEL
TREEL
PGMM
VSYNC
EJECT
ROT
VSS
X1 (SUB)
X0 (SUB)
GAIN CTL
S.C.R Ⓗ
CYL ON Ⓛ
LCD P Ⓛ
DISP SYNC
SW1
SW2
SW3
SW4
SBOO
SBIO NAIBU
SCK
UNDER CUT
DC JACK
SUB POWER
CAP RSF
CAP TS
VDD3
VSS3
VLP
HSW
D6001 MA133
R6037 220K
R6035 27K
VR6001 10KB
R6036 22K
UNDER CUT
R6029 82K
R6030 47K
R6022 1K
R6072 1K
R6025 1K
R6026 1K
R6027 1K
R6028 1K
C6024 0.1
TL6003
CP6214
CP6215
R6201 100K
R6210 100K
R6202 100K
C6201 0.1
C6202 10V10
R6203 6800
R6204 10K
TL6202
R6217 2200
C6207 25V4.7
C6208 10V10
R6205 2200
C6206 0.022
C6209 560P
R6207 2200
R6206 180
C6210 1
C6212 0.1
C6211 1
R6212 100K
C6218 4V15
R6213 100K
C6217 10V2.2
R6023 1K
VR6201 100KB
R6208 47K
C6213 0.027
PG MM
L6201 10μ
CP6001
C6214 1
C6020 0.1
C6025 0.1
C6215 0.01
R6086 1K
C6007 0.1
C6006 6V22
R6007 47K
C6003 33P
C6004 33P
X6002 VSX0439
C6216 0.1
R6209 47K
CP6207
CP6208
CP6209
CP6210
TL6002
R6057 47K
TL6003
R6040 4700
R6070 47K
C6023 0.1
C6021 0.1
R6215 120
C6026 0.1
TP6201
NOREG
REG 5V
(REG 5V)
QR6015 UN2130X (FE Ⓛ:ON)
C6017 0.01
R6063 3900
R6044 1500
QR6002 XN4130X (S-TAB Ⓛ:ON)
R6043 3900
D6003 MA132WK
QR6013 UN9213 (EF ON Ⓗ:ON)
QR6010 UN9115 (POWER LED ON Ⓛ:ON)
R6042 330
CP6202
CP6203
CP6201
CP6204
CP6205
R6087 1K
C6016 16V22
TL600A
QR6901 UN9213
QR6003 XN1213
(P.ON Ⓗ:ON)
(EXT DC Ⓗ:ON)
R6045 4700
R6046 47K
IC6007 MN12821RXT
RESET
IN
OUT
GND
C6009 50V3.3
C6028 0.1
R6074 100
R6041 100K
C6018 0.1
IC6002 RH5RE50AAT1
5V REG.
C6029 0.1
D6013 MA3130
D6014 MA3130
R6024 1K
R6076 10K
R6084 1M
R6078 10K
C6019 0.1
R6079 4700
IC6008 LM393DB-L
L6001 10μ
A-LINE
B-LINE
(TO LINER A)
A-FADE Ⓛ
A-MUTE Ⓗ
A-EE Ⓗ
LP Ⓗ
A-DREC Ⓗ
CTL (+)
CTL (−)
S-TAPE Ⓛ
S-TAB 5V
REG 5V
GND
(TO LUMINANCE & CHROMINANCE)
S-TAPE Ⓛ
S-TAB 5V
VSS OUT
RERASE 5V
H.A.SW
S-VHS Ⓛ
V-EE Ⓗ
RERASE ON
P.B Ⓗ
H.A.P.B Ⓛ
VENV DET
LP Ⓗ
V.D.REC Ⓗ
LINE Ⓗ
S DET Ⓗ
GAIN CTL
SCR Ⓗ
SW1
SW2
SW3
SW4
V LOCK PU
ROTARY SW
H.SW
Y.IN
REG 5V
RF 5V
VIDEO 9V
GND
P6201 (TO DRIVE)
1 GND (M) P2001-1
2 SSREG 5V P2001-2
3 GND P2001-3
4 GND (SW) P2001-4
5 R/S/F P2001-5
6 TS P2001-6
7 CAP FG P2001-7
8 CAP EC P2001-8
9 DRIVE CLK P2001-9
10 CYL SW P2001-10
11 CAP SW P2001-11
12 CYL VM P2001-12
13 CAP VM P2001-13
14 S-REELP P2001-14
15 CYL EC P2001-15
16 PG P2001-16
17 CYL FG P2001-17
18 CYL ON Ⓛ P2001-18
19 —— P2001-19
20 TRIWAVE P2001-20
21 NOREG P2001-21
22 REG 5V P2001-22
P6002 TO SUB OPERATION/POWER
1 EXT DC P6501-1
2 VIDEO 9V P6501-2
3 —— P6501-3
4 GND P6501-4
5 GND P6501-5
6 RF 5V P6501-6
7 TRI-WAVE P6501-7
8 —— P6501-8
9 SYS REG 5V P6501-9
10 EVF 5V P6501-10
11 POWER ON Ⓛ P6501-11
12 CYL SW P6501-12
13 CAP SW P6501-13
14 S.S REG 5V P6501-14
15 CYL VM P6501-15
16 CAP VM P6501-16
17 SW NOREG P6501-17
18 RF SHUT DOWN P6501-18
19 POWER SW P6501-19
20 CAM P ON Ⓗ P6501-20
21 POWER LED P6501-21
22 REG 5V P6501-22
23 REG 5V P6501-23
24 EJECT SW P6501-24
25 3V P6501-25
26 CAMERA Ⓛ P6501-26
27 L1 BATT (+) P6501-27
28 —— P6501-28
29 NOREG GND P6501-29
30 NOREG GND P6501-30
31 NOREG P6501-31
32 NOREG P6501-32
(A8) (A9) (A10) (A11) (A12) (A13) (A14) (A15) (A16) (A17) (A18) (A19) (A20) (A21) (A22) (A23) (A24)
(B28) (B29) (B30) (B21) (B20) (B31) (B32) (B33) (B34) (B18) (B17) (B15) (B35) (B36) (B37) (B38) (B39) (B22)(B23)
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21

NOTE: (H) MEANS H • RATE
(V) MEANS V • RATE

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

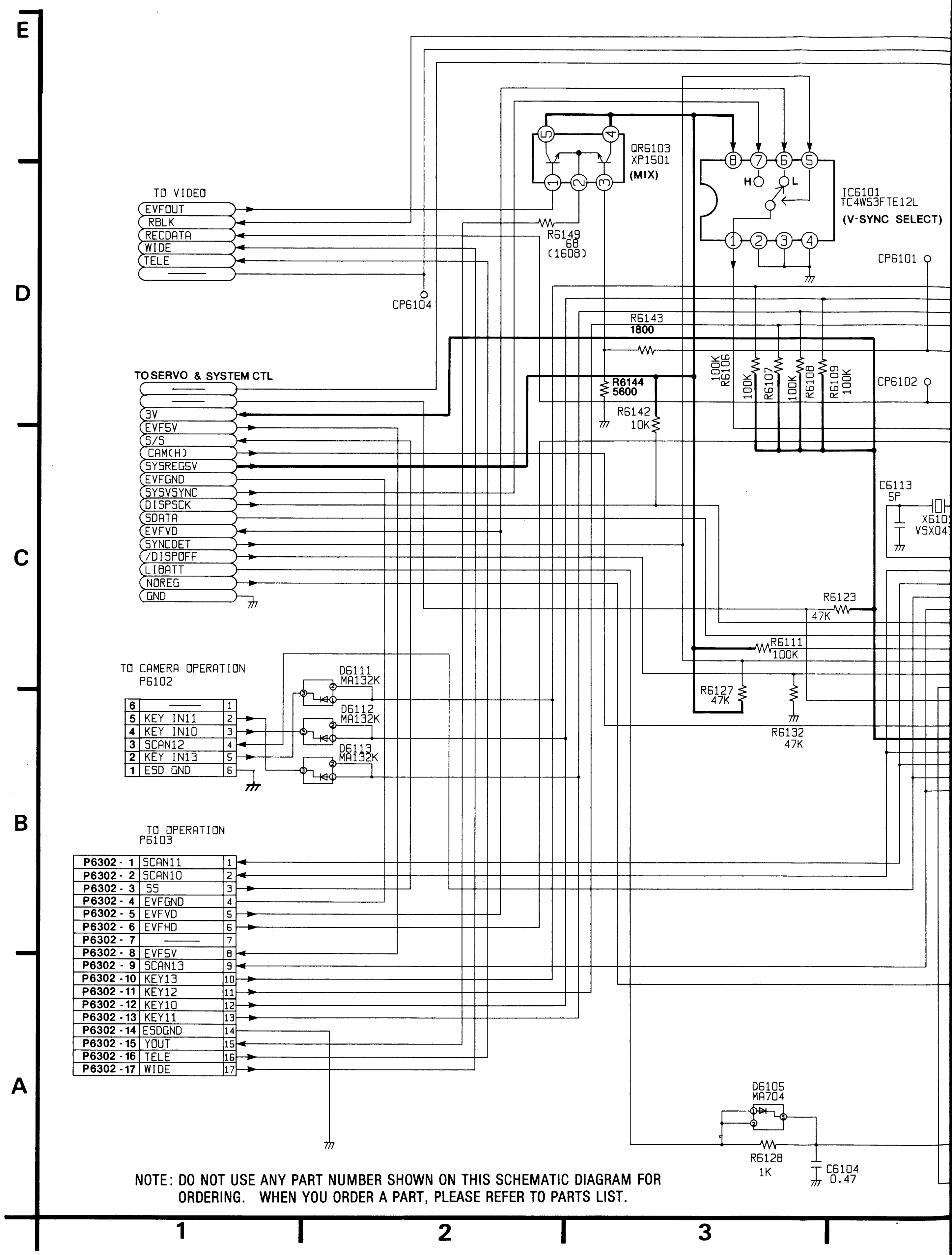
SERVO & SYSTEM CONTROL ICs VOLTAGE CHART

REF. NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	1	112	13	14	15	16	17	18	19	20
STOP	4.8	1.3	4.8	4.8	4.8	0	4.7	4.7	4.7	0	4.7	4.8	4.7	1.0	4.8	0	4.7	0	0	0
REC/PLAY	4.7	1.3	4.7	0	0	0	4.7	4.7	4.7	0	4.5	4.7	4.7	1.0	4.8	4.7	4.7	4.7	4.7	4.7
F.F.	4.8	4.4	4.4	4.8	4.8	0	4.7	4.7	4.7	0	4.5	4.8	4.7	0.9	4.8	4.8	4.8	0	0	0
REF. NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0.2	0.3	2.4	0	4.8	0	0	0.5	0	5.0	2.4	0.3	0	5.0	4.9	5.0	5.0	2.5	2.5	0
REC/PLAY	0.3	0.3	2.4	0	4.8	0	0	0.5	0	0	2.4	0.3	0	4.9	5.0	4.9	5.0	2.5	2.6	0
F.F.	0.7	0.7	2.4	0	4.8	0	0	0.5	0	4.9	2.4	0.6	0	5.0	4.9	4.9	4.9	1.4	2.5	0
REF. NO.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	2.2	2.2	2.3	0	4.8	4.8	4.8	0	4.8	0	0	3.9	3.9	4.2	4.3	2.6	2.5	2.3	4.8	4.8
REC/PLAY	2.2	1.1	2.3	0	1.0	4.7	4.7	3.0	0	0	0.9	3.8	1.1	0.9	0.8	0	0.5	1.0	4.7	4.8
F.F.	1.4	1.4	2.3	1.4	1.4	1.4	4.8	0	4.8	1.7	0	1.6	3.9	4.2	1.6	1.5	0.5	0	1.6	4.8
REF. NO.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	0	2.0	2.2	0	0.1	0.1	5.0	2.4	0.6	0	0.1	4.2	0	2.4	4.6	0	0	0.7	2.4
REC/PLAY	1.1	1.1	1.0	0	0	1.5	1.5	4.9	2.4	1.5	1.2	—	4.0	0	2.4	2.3	0	0	2.4	2.4
F.F.	1.8	0	—	0.3	0	1.2	1.7	4.9	2.4	1.8	1.2	—	—	0	2.4	2.3	0.2	0	2.4	2.4
REF. NO.	IC6001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	2.2	0.5	4.8	0	0	0.5	2.4	0.6	0.5	0.5	2.4	0	0.6	4.1	4.8	1.2	0	0.1	4.7	0.7
REC/PLAY	2.1	1.4	1.4	2.9	3.8	0	2.4	2.4	0	0	2.4	0	2.1	2.7	4.8	1.9	0	0	4.7	0.1
F.F.	2.3	2.4	4.8	0	0	0	2.4	2.4	0	2.3	2.4	0	2.0	2.7	4.8	1.3	0.1	0.7	4.0	1.2
REF. NO.	IC6001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
STOP	0.5	3.2	0.3	0	0	5.0	0.6	0.6	0.8	4.7	0	4.6	1.0	1.0	4.7	4.7	4.8	0	4.7	4.8
REC/PLAY	1.8	3.2	0	2.0	0	4.9	2.2	0	4.7	4.7	4.8	4.6	4.5	4.8	4.7	4.7	4.8	0	4.7	4.7
F.F.	2.2	3.2	0.1	0.8	0.6	4.4	3.4	0	0	0	0	4.6	4.5	4.8	4.7	4.7	4.8	0	4.7	4.8
REF. NO.	IC6001																			
MODE	121	122	123	124	125	126	127	128												
STOP	4.6	4.7	4.8	0	0	4.7	4.8	1.1												
REC/PLAY	1.8	0	0	0	0	4.7	4.7	0												
F.F.	4.6	2.2	4.8	2.3	0	2.3	4.8	2.0												
REF. NO.	IC6002										IC6004									
MODE	1	2	3								1	2	3	4	5	6	7	8	9	10
STOP	0	6.2	5.0								2.2	0	0	0	2.0	6.2	4.0	2.7	4.0	6.2
REC/PLAY	0	6.1	5.0								2.1	0	1.8	0	2.0	6.1	4.0	2.5	4.0	6.1
F.F.	0	6.0	5.0								2.2	0	0	0	2.6	6.1	4.0	3.0	4.0	6.0
REF. NO.	IC6005										IC6006									
MODE	1	2	3	4	5						1	2	3	4	5	6	7	8		
STOP	4.0	4.0	0	4.7	5.0						4.2	0.9	2.4	0	3.3	3.0	4.6	4.6		
REC/PLAY	3.8	3.9	0	4.7	5.0						4.2	—	2.2	0	3.2	3.0	4.6	4.6		
F.F.	3.9	4.0	0	1.5	5.0						—	—	—	0	3.2	3.0	4.6	4.6		
REF. NO.	IC6007										IC6008									
MODE	1	2	3								1	2	3	4	5	6	7	8		
STOP	0	4.8	5.0								4.6	0.6	0.6	0	0.4	0.4	0	4.6		
REC/PLAY	0	4.8	5.0								—	0.6	0.6	0	0.8	0.8	0	4.6		
F.F.	0	4.8	5.0								—	0.6	0.6	0	2.3	2.1	0	4.6		

SERVO & SYSTEM CONTROL TRANSISTORs VOLTAGE CHART

REF. NO.	Q6001																	
MODE	E	C	B															
STOP	0.7	6.2	0															
REC/PLAY	—	6.1	—															
F.F.	0.9	6.0	0.4															
REF. NO.	QR6001			QR6002						QR6003						QR6004		
MODE	E	C	B	1	2	3	4	5	6	1	2	3	4	5		E	C	B
STOP	4.6	0	4.8	4.6	3.9	4.5	4.6	3.9	4.6	0	0	6.7	0	4.8		3.5	4.3	1.3
REC/PLAY	4.6	—	—	4.5	3.8	4.6	4.5	3.9	4.6	0	0	6.6	0	4.7		3.5	4.3	1.3
F.F.	4.6	0.4	4.4	4.6	3.9	4.6	4.6	3.9	4.6	0	0	6.6	0	4.8		3.5	4.3	1.3
REF. NO.	QR6005			QR6006			QR6010			QR6013			QR6015			QR6018		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	4.7	4.8	0	4.9	4.7	4.3	4.6	4.5	0	0	4.6	0	4.6	4.6	4.6	4.6	4.0	4.6
REC/PLAY	4.7	4.7	0	4.8	4.7	4.3	4.6	4.5	0	0	0	4.7	4.5	4.5	3.9	4.6	4.0	4.6
F.F.	4.7	4.8	0	4.8	4.7	4.2	4.6	4.5	0	0	4.6	0	4.6	4.6	4.6	4.6	4.0	4.6
REF. NO.	QR6019																	
MODE	E	C	B															
STOP	0	4.6	0															
REC/PLAY	0	4.6	0															
F.F.	0	4.6	0															

3-17. SUB SYSTEM CONTROL SCHEMATIC DIAGRAM

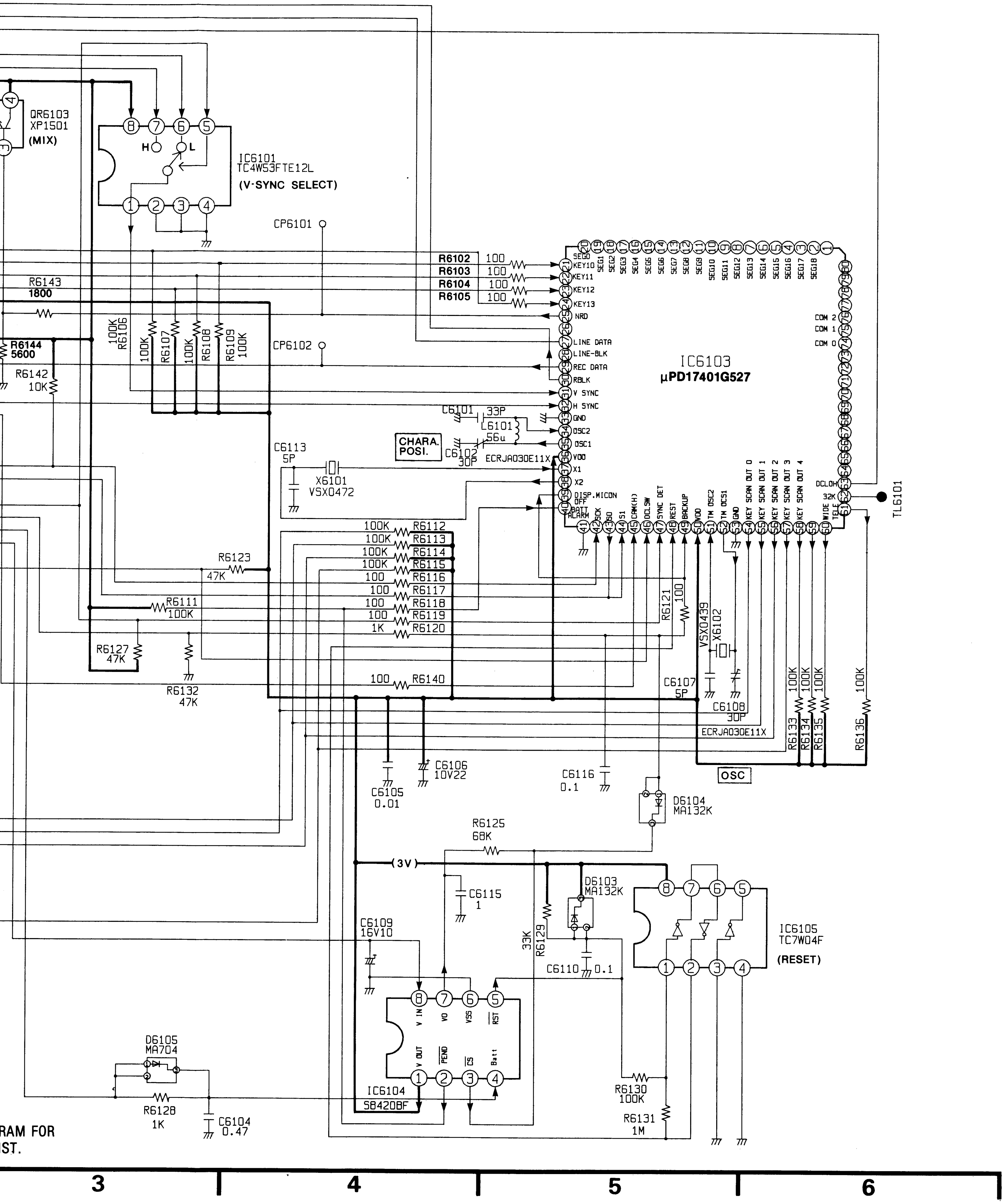

E
D
C
B
A
1
2
3
TO VIDEO
EVFOUT
RBLK
RECDATA
WIDE
TELE
CP6104
QR6103
XP1501
(MIX)
R6149
68
(1608)
IC6101
TC4W53FTE12L
(V-SYNC SELECT)
H
L
CP6101
R6143
1800
R6144
5600
R6142
10K
100K
R6106
100K
R6107
100K
R6108
R6109
100K
CP6102
TO SERVO & SYSTEM CTL
3V
EVF5V
S/S
CAM(H)
SYSREG5V
EVFGND
SYSVSYNC
DISPSCK
SDATA
EVFVD
SYNCDET
/DISPOFF
LIBATT
NOREG
GND
C6113
5P
X610
VSX04
R6123
47K
R6111
100K
R6127
47K
R6132
47K
TO CAMERA OPERATION
P6102
D6111
MA132K
D6112
MA132K
D6113
MA132K
TO OPERATION
P6103
D6105
MA704
R6128
1K
C6104
0.47

6	—	1
5	KEY IN11	2
4	KEY IN10	3
3	SCAN12	4
2	KEY IN13	5
1	ESD GND	6

P6302 - 1	SCAN11	1
P6302 - 2	SCAN10	2
P6302 - 3	SS	3
P6302 - 4	EVFGND	4
P6302 - 5	EVFVD	5
P6302 - 6	EVFHD	6
P6302 - 7	—	7
P6302 - 8	EVF5V	8
P6302 - 9	SCAN13	9
P6302 - 10	KEY13	10
P6302 - 11	KEY12	11
P6302 - 12	KEY10	12
P6302 - 13	KEY11	13
P6302 - 14	ESDGND	14
P6302 - 15	YOUT	15
P6302 - 16	TELE	16
P6302 - 17	WIDE	17

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

AGRAM



QR6103
XP1501
(MIX)
IC6101
TC4W53FTE12L
(V-SYNC SELECT)
H
L
CP6101
CP6102
R6143
1800
R6144
5600
R6142
10K
R6106
R6107
R6108
R6109
100K
R6102
R6103
R6104
R6105
100
IC6103
µPD17401G527
SEG0
KEY10
KEY11
KEY12
KEY13
NRD
LINE DATA
LINE-BLK
REC DATA
RBLK
V SYNC
H SYNC
GND
OSC2
OSC1
VDD
X1
X2
DISP.MICON OFF
BATT ALARM
SCK
SO
SI
CAM(H)
DCLSW
SYNC DET
REST
BACKUP
VDD
TM OSC2
TM OSC1
GND
KEY SCAN OUT 0
KEY SCAN OUT 1
KEY SCAN OUT 2
KEY SCAN OUT 3
KEY SCAN OUT 4
WIDE TELE
DCLOCK
32K
COM 2
COM 1
COM 0
TL6101
C6101
33P
L6101
56µ
C6102
30P
CHARA. POSI.
ECRJA030E11X
C6113
5P
X6101
VSX0472
R6112
R6113
R6114
R6115
R6116
R6117
R6118
R6119
R6120
100K
100
1K
R6123
47K
R6111
100K
R6127
47K
R6132
47K
R6121
100
VSX0439
X6102
C6107
5P
C6108
30P
ECRJA030E11X
R6140
100
R6133
R6134
R6135
R6136
100K
OSC
C6105
0.01
C6106
10V22
C6116
0.1
D6104
MA132K
R6125
68K
(3V)
C6115
1
D6103
MA132K
R6129
33K
C6110
0.1
C6109
16V10
IC6105
TC7W04F
(RESET)
IC6104
S8420BF
V IN
VO
VSS
RST
V OUT
PEND
CS
Batt
R6130
100K
R6131
1M
D6105
MA704
R6128
1K
C6104
0.47
RAM FOR
ST.
3
4
5
6

SUB SYSTEM CONTROL ICs VOLTAGE CHART

REF. NO.	IC6101																			
MODE	1	2	3	4	5	6	7	8												
STOP	4.5	0	0	0	0.9	3.5	4.8	4.6												
REC/PLAY	4.5	0	0	0	0.9	3.5	2.9	4.6												
F.F.	4.5	0	0	0	0.9	3.5	4.8	4.6												

REF. NO.	IC6103																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0	0	0	0	0	0
REC/PLAY	0	0	0	0	0	0	0	0	0	0	0	0.9	0	0	0	0	0	0	0	0
F.F.	0	0	0	0	0	0	0	0	0	0	3.4	0	2.6	2.7	2.4	0	0	0	0	0

REF. NO.	IC6103																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	4.8	4.8	4.8	4.6	0.1	0.1	0	0	0	0	4.5	4.3	0	2.3	2.4	4.8	1.4	0	4.8	0
REC/PLAY	4.7	4.7	4.7	4.5	0.1	0.2	0	0	0	0	4.5	4.3	0	2.3	2.4	4.8	2.3	2.4	4.8	0
F.F.	4.8	4.7	4.7	4.3	0.1	0.1	0	0	0	0	4.5	4.3	0	2.3	2.4	4.8	2.3	2.3	4.8	0

REF. NO.	IC6103																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0	4.3	4.0	4.0	4.9	4.8	0.9	4.8	4.7	4.8	2.2	2.2	0	0	4.8	0	4.7	0	0	0
REC/PLAY	0	4.2	4.0	4.0	0.1	4.8	0.9	4.8	4.7	4.8	2.2	2.2	0	4.7	4.7	4.7	4.7	0	4.8	0
F.F.	0	4.3	4.0	4.0	4.9	4.8	0.9	4.8	4.7	4.8	2.2	2.2	0	4.8	4.8	4.8	4.8	0	4.8	0

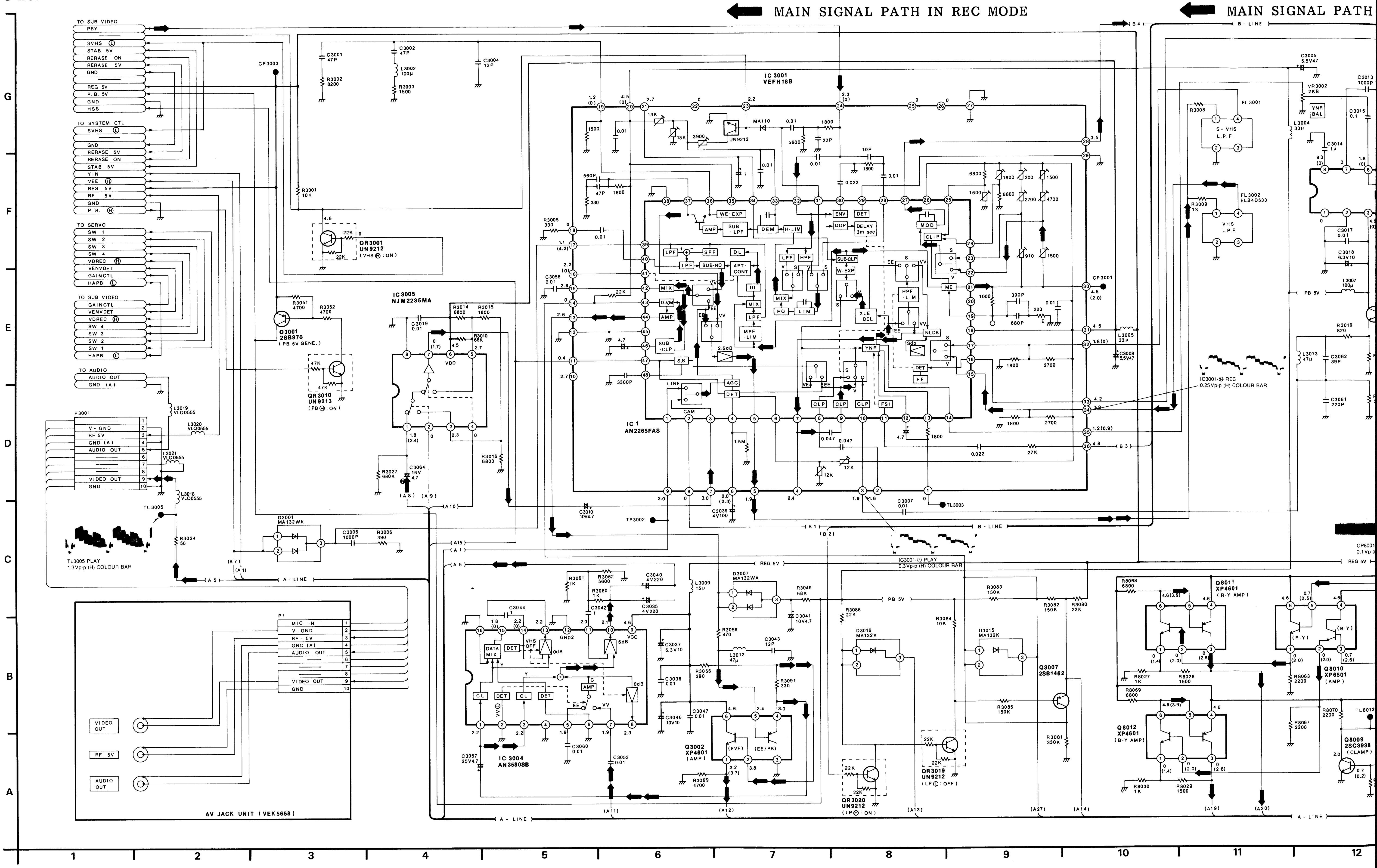
REF. NO.	IC6103																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	4.8	0	4.8	4.8	0	4.8	0	0	4.8	0	0	0	0	0	0	0	0	0	0
REC/PLAY	0	4.8	0	4.8	4.8	0	0	0	0	0	0	0	2.3	0	0	0	0	0	0	0
F.F.	0	4.8	0	4.8	4.8	0	0	4.8	0	0	0	0	4.8	0	0	0	0	0	0	0

REF. NO.	IC6104										IC6105									
MODE	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8		
STOP	4.8	0	4.9	0	4.8	0	4.9	6.2			4.8	4.8	0	0	4.8	0	0	4.8		
REC/PLAY	4.8	0	4.9	0	4.8	0	4.9	6.0			4.6	4.8	0	0	4.8	0	0	4.8		
F.F.	4.8	0	4.9	0	4.8	0	4.9	6.0			4.7	4.8	0	0	4.8	0	0	4.8		

SUB SYSTEM CONTROL TRANSISTORs VOLTAGE CHART

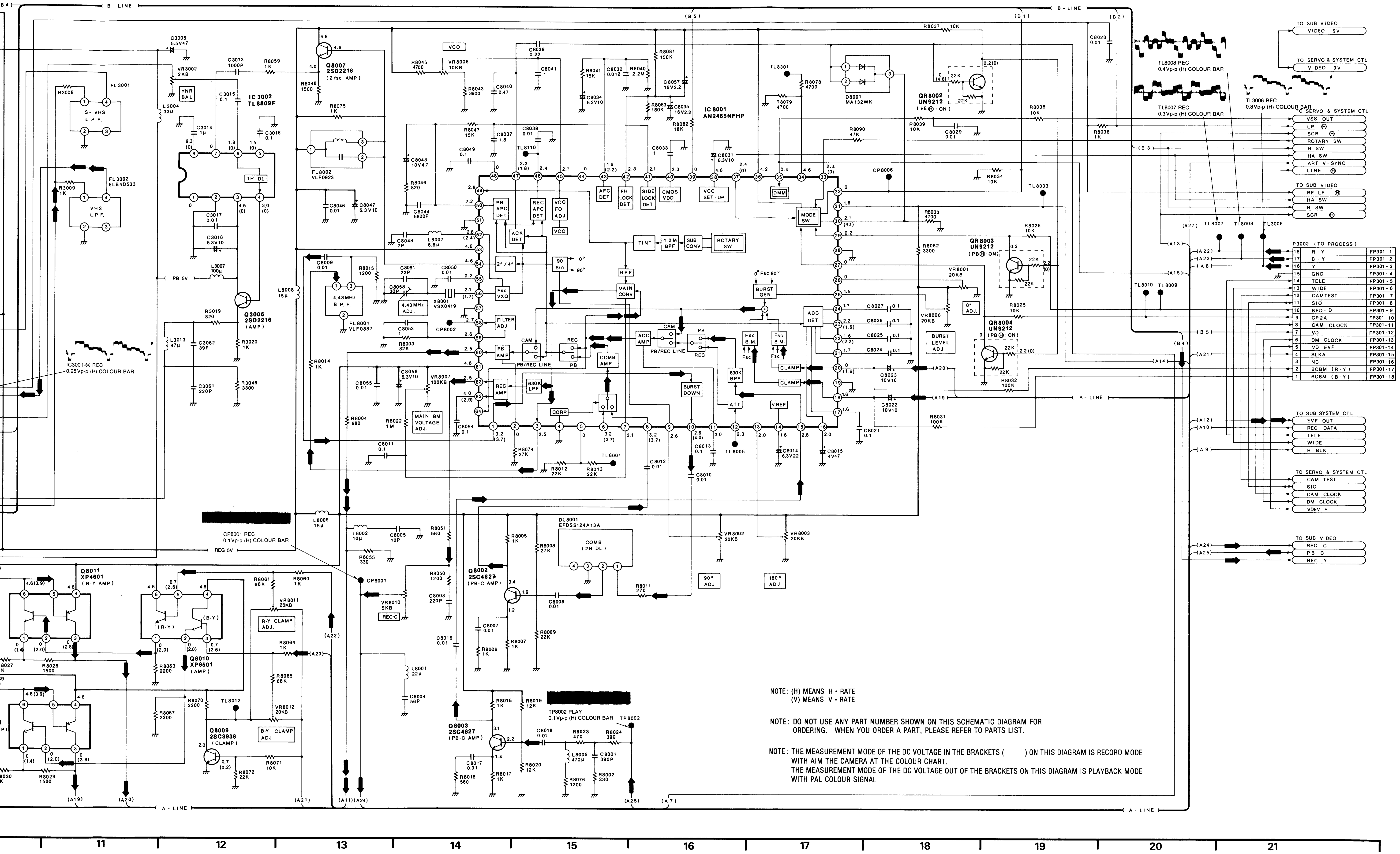
REF. NO.	QR6103																		
MODE	1	2	3	4	5														
STOP	3.0	2.4	0	4.6	4.6														
REC/PLAY	3.0	2.4	0	4.6	4.6														
F.F.	3.1	2.4	0	4.6	4.6														

3-18. LUMINANCE & CHROMINANCE SCHEMATIC DIAGRAM


MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH
TO SUB VIDEO
PBY
SVHS Ⓛ
STAB 5V
RERASE ON
RERASE 5V
GND
REG 5V
P. B. 5V
GND
HSS
TO SYSTEM CTL
SVHS Ⓛ
GND
RERASE 5V
RERASE ON
STAB 5V
YIN
VEE Ⓗ
REG 5V
RF 5V
GND
P. B. Ⓗ
TO SERVO
SW 1
SW 2
SW 3
SW 4
VDREC Ⓗ
VENVDET
GAINCTL
HAPB Ⓛ
TO SUB VIDEO
GAINCTL
VENVDET
VDREC Ⓗ
SW 4
SW 3
SW 2
SW 1
HAPB Ⓛ
TO AUDIO
AUDIO OUT
GND (A)
P3001
V-GND
RF 5V
GND (A)
AUDIO OUT
VIDEO OUT
GND
TL3005
TL3005 PLAY
1.3Vp-p (H) COLOUR BAR
CP3003
QR3001
UN9212
(VHS Ⓗ : ON)
Q3001
2SB970
(PB 5V GENE.)
QR3010
UN9213
(PB Ⓗ : ON)
IC3005
NJM2235MA
IC 3001
VEFH18B
IC 1
AN2265FAS
IC3001-㉞ REC
0.25Vp-p (H) COLOUR BAR
IC3001-③ PLAY
0.3Vp-p (H) COLOUR BAR
FL3001
S-VHS
L.P.F.
FL3002
ELB4D533
VHS
L.P.F.
CP3001
TL3003
TP3002
D3001
MA132WK
P1
MIC IN
V-GND
RF 5V
GND (A)
AUDIO OUT
VIDEO OUT
GND
VIDEO OUT
RF 5V
AUDIO OUT
AV JACK UNIT (VEK5658)
IC 3004
AN3580SB
D3007
MA132WA
Q3002
XP4601
(AMP)
D3016
MA132K
D3015
MA132K
Q3007
2SB1462
QR3020
UN9212
(LP Ⓗ : ON)
QR3019
UN9212
(LP Ⓛ : OFF)
Q8011
XP4601
(R-Y AMP)
Q8012
XP4601
(B-Y AMP)
Q8010
XP6501
(AMP)
Q8009
2SC3938
(CLAMP)
TL8012
CP8001
0.1Vp-p
A-LINE
B-LINE
REG 5V
PB 5V
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12

Back Page:
SUB SYSTEM CONTROL Section

MAIN SIGNAL PATH IN PLAYBACK MODE


B-LINE
A-LINE
IC3002
TL8809F
IC 8001
AN2465NFHP
Q8007
2SD2216
(2fsc AMP)
Q3006
2SD2216
(AMP)
FL3001
S-VHS
L.P.F.
FL3002
ELB4D533
VHS
L.P.F.
YNR
BAL
1H DL
VCO
FL8002
VLF0923
FL8001
VLF0887
4.43MHz
B.P.F.
4.43MHz
ADJ.
X8001
VSX0419
PB APC DET
REC APC DET
VCO FO ADJ
AFC DET
FH LOCK DET
SIDE LOCK DET
CMOS VDD
VCC SET-UP
DMM
MODE SW
ACK DET
2f / 4f
90 Sin
Fsc VXO
FILTER ADJ
HPF
MAIN CONV
TINT
4.2M BPF
SUB CONV
ROTARY SW
BURST GEN
ACC DET
BURST LEVEL ADJ
0° ADJ.
0° Fsc 90°
Fsc B.M.
CLAMP
630K BPF
ACC AMP
CAM
PB
REC
PB/REC LINE
PB AMP
REC AMP
630K LPF
COMB AMP
CORR
BURST DOWN
ATT
V.REF
MAIN BM VOLTAGE ADJ.
QR8002
UN9212
(EE⊕ : ON)
QR8003
UN9212
(PB⊕ : ON)
QR8004
UN9212
(PB⊕ : ON)
D8001
MA132WK
DL8001
EFDSS124A13A
COMB
(2H DL)
90° ADJ
180° ADJ
Q8002
2SC4627
(PB-C AMP)
Q8003
2SC4627
(PB-C AMP)
Q8011
XP4601
(R-Y AMP)
Q8010
XP6501
(AMP)
Q8009
2SC3938
(CLAMP)
R-Y CLAMP ADJ.
B-Y CLAMP ADJ.
REC-C
CP8001
CP8001 REC
0.1Vp-p (H) COLOUR BAR
REG 5V
PB 5V
IC3001-⑥ REC
0.25Vp-p (H) COLOUR BAR
TL8008 REC
0.4Vp-p (H) COLOUR BAR
TL8007 REC
0.3Vp-p (H) COLOUR BAR
TL3006 REC
0.8Vp-p (H) COLOUR BAR
TP8002 PLAY
0.1Vp-p (H) COLOUR BAR
TP8002
TO SUB VIDEO
VIDEO 9V
TO SERVO & SYSTEM CTL
VIDEO 9V
TO SERVO & SYSTEM CTL
VSS OUT
LP ⊕
SCR ⊕
ROTARY SW
H SW
HA SW
ART V-SYNC
LINE ⊕
TO SUB VIDEO
RF LP ⊕
HA SW
H SW
SCR ⊕
P3002 (TO PROCESS)
18 R-Y FP301-1
17 B-Y FP301-2
16 Y FP301-3
15 GND FP301-4
14 TELE FP301-5
13 WIDE FP301-6
12 CAMTEST FP301-7
11 SIO FP301-8
10 BFD-D FP301-9
9 CP2A FP301-10
8 CAM CLOCK FP301-11
7 VD FP301-12
6 DM CLOCK FP301-13
5 VD EVF FP301-14
4 BLKA FP301-15
3 NC FP301-16
2 BCBM (R-Y) FP301-17
1 BCBM (B-Y) FP301-18
TO SUB SYSTEM CTL
EVF OUT
REC DATA
TELE
WIDE
R BLK
TO SERVO & SYSTEM CTL
CAM TEST
SIO
CAM CLOCK
DM CLOCK
VDEV F
TO SUB VIDEO
REC C
PB C
REC Y
11
12
13
14
15
16
17
18
19
20
21

[redacted]

[redacted]

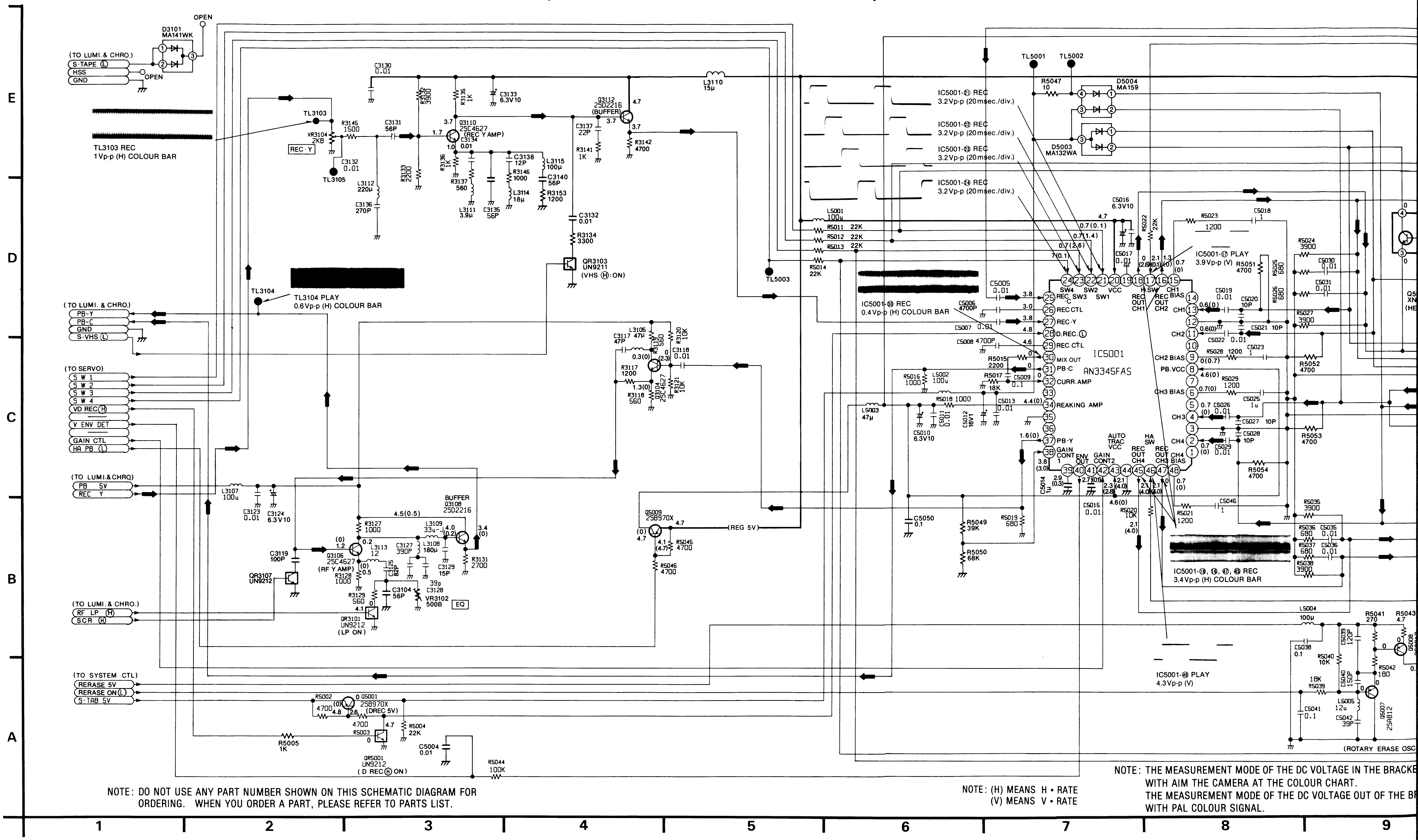
NOTE: (H) MEANS H • RATE
(V) MEANS V • RATE

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS (   ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

3-19. SUB VIDEO SCHEMATIC DIAGRAM

MAIN SIGNAL PATH IN REC MODE   MAIN SIGNAL PATH IN PLAYBACK MODE

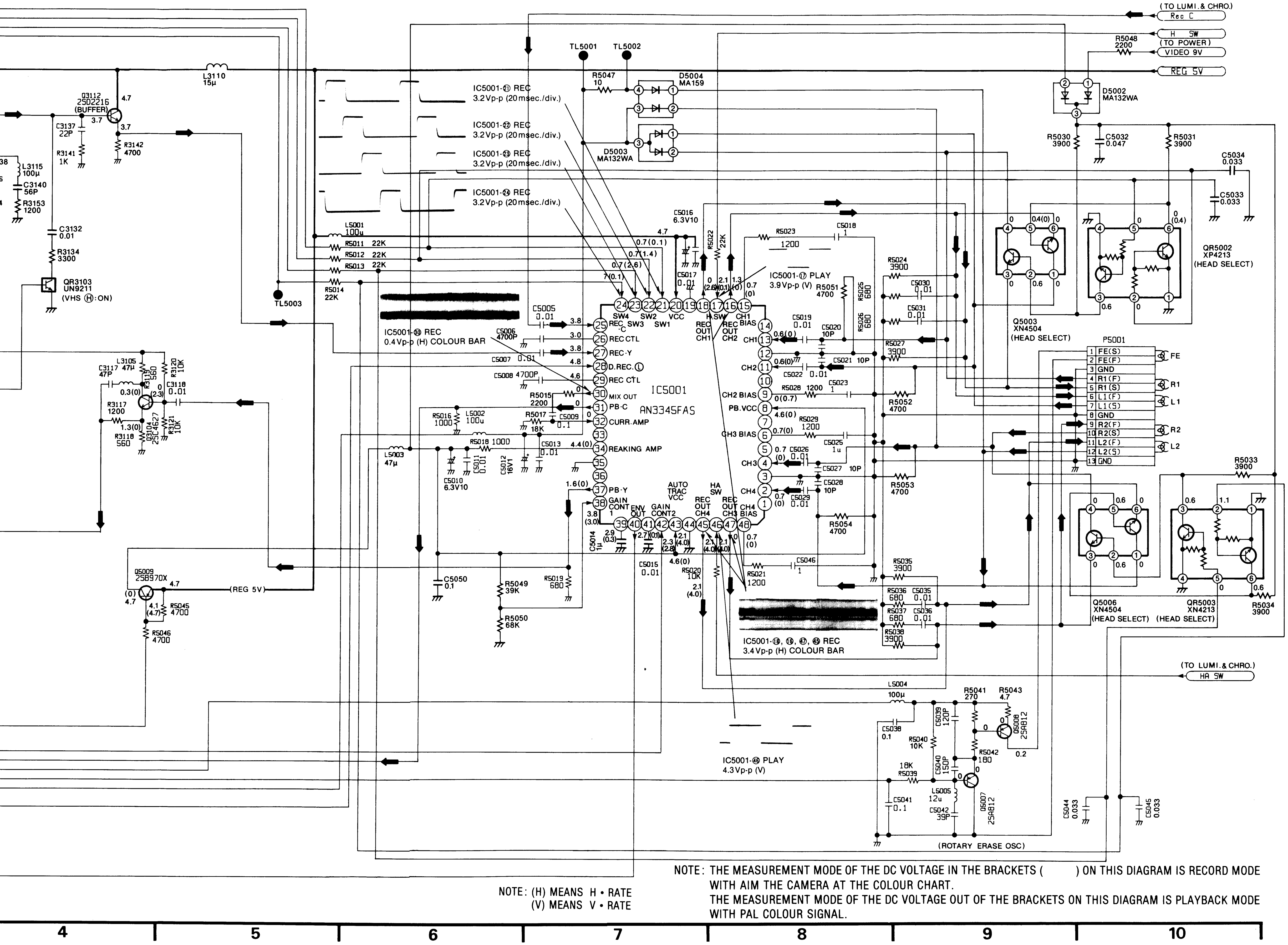

D3101
MA141WK
OPEN
(TO LUMI. & CHRO.)
S-TAPE Ⓛ
HSS
GND
TL3103 REC
1Vp-p (H) COLOUR BAR
TL3103
VR3104 2K8
REC·Y
TL3105
C3132 0.01
R3145 1500
C3131 56P
C3130 0.01
R3132 3900
R3133 2200
R3135 1K
C3133 6.3V10
Q3110 2SC4627 (REC Y AMP)
C3134 0.01
R3136 1K
R3137 560
L3111 3.9μ
C3135 56P
C3138 12P
R3146 1000
L3114 18μ
L3115 100μ
C3140 56P
R3153 1200
L3112 220μ
C3136 270P
Q3112 2SD2216 (BUFFER)
C3137 22P
R3141 1K
R3142 4700
C3132 0.01
R3134 3300
QR3103 UN9211 (VHS Ⓗ:ON)
L3110 15μ
TL3104
TL3104 PLAY
0.6Vp-p (H) COLOUR BAR
(TO LUMI. & CHRO.)
PB-Y
PB-C
GND
S-VHS Ⓛ
(TO SERVO)
S W 1
S W 2
S W 3
S W 4
VD REC Ⓗ
V ENV DET
GAIN CTL
HA PB Ⓛ
(TO LUMI.&CHRO)
PB 5V
REC Y
L3107 100μ
C3123 0.01
C3124 6.3V10
L3105 47μ
C3117 47P
R3119 560
R3120 10K
C3118 0.01
R3117 1200
R3118 560
Q3104 2SC4627
R3121 10K
TL5003
Q5009 2SB970X
R5045 4700
R5046 4700
(REG 5V)
BUFFER Q3108 2SD2216
R3127 1000
L3109 33μ
L3113 12
C3127 390P
L3108 180μ
C3129 15P
R3131 2700
Q3106 2SC4627 (RF Y AMP)
R3128 1000
C3125 82P
C3104 56P
C3128 39p
VR3102 500B
EQ
R3129 560
QR3101 UN9212 (LP ON)
C3119 100P
QR3107 UN9212
(TO LUMI. & CHRO.)
RF LP Ⓗ
SCR Ⓗ
(TO SYSTEM CTL)
RERASE 5V
RERASE ON Ⓛ
S-TAB 5V
R5002 4700
Q5001 2SB970X (DREC 5V)
R5003 4700
R5004 22K
R5005 1K
QR5001 UN9212 (D REC Ⓗ ON)
C5004 0.01
R5044 100K
TL5001
TL5002
R5047 10
D5004 MA159
D5003 MA132WA
IC5001-㉑ REC 3.2Vp-p (20msec./div.)
IC5001-㉒ REC 3.2Vp-p (20msec./div.)
IC5001-㉓ REC 3.2Vp-p (20msec./div.)
IC5001-㉔ REC 3.2Vp-p (20msec./div.)
L5001 100μ
R5011 22K
R5012 22K
R5013 22K
R5014 22K
C5016 6.3V10
C5017 0.01
R5022 22K
R5023 1200
C5018 1
IC5001-⑰ PLAY 3.9Vp-p (V)
R5051 4700
R5024 3900
R5025 680
R5026 680
C5030 0.01
C5031 0.01
R5027 3900
IC5001-㉚ REC 0.4Vp-p (H) COLOUR BAR
C5005 0.01
C5006 4700P
C5007 0.01
C5008 4700P
R5015 2200
R5016 1000
L5002 100μ
R5017 18K
C5009 0.1
L5003 47μ
R5018 1000
C5013 0.01
C5011 0.01
C5012 16V1
C5010 6.3V10
C5014 1μ
C5015 0.01
R5020 10K
R5019 680
R5049 39K
R5050 68K
C5050 0.1
IC5001 AN3345FAS
SW4 SW3 SW2 SW1 VCC
REC CTL
REC·Y
D.REC. Ⓛ
REC CTL
MIX OUT
PB-C
CURR.AMP
REAKING AMP
PB-Y
GAIN CONT 1
ENV OUT
GAIN CONT2
AUTO TRAC VCC
REC OUT CH4
HA SW
REC OUT CH3
CH4 BIAS
H.SW
REC OUT CH1
REC OUT CH2
CH1 BIAS
CH1
CH2
CH2 BIAS
PB.VCC
CH3 BIAS
CH3
CH4
C5019 0.01
C5020 10P
C5021 10P
C5022 0.01
R5028 1200
C5023 1
R5029 1200
C5025 1μ
C5026 0.01
C5027 10P
C5028 10P
C5029 0.01
R5052 4700
R5053 4700
R5054 4700
R5021 1200
C5046 1
R5035 3900
R5036 680
C5035 0.01
R5037 680
C5036 0.01
R5038 3900
IC5001-⑬, ⑮, ㊼, ㊽ REC 3.4Vp-p (H) COLOUR BAR
IC5001-㊻ PLAY 4.3Vp-p (V)
L5004 100μ
C5038 0.1
C5039 120P
R5040 10K
R5041 270
R5043 4.7
R5042 180
R5039 18K
C5040 150P
L5005 12μ
C5041 0.1
C5042 39P
Q5007 2SA812
(ROTARY ERASE OSC
1 2 3 4 5 6 7 8 9
E D C B A

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: (H) MEANS H • RATE
(V) MEANS V • RATE

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKE
WITH AIM THE CAMERA AT THE COLOUR CHART.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE B
WITH PAL COLOUR SIGNAL.

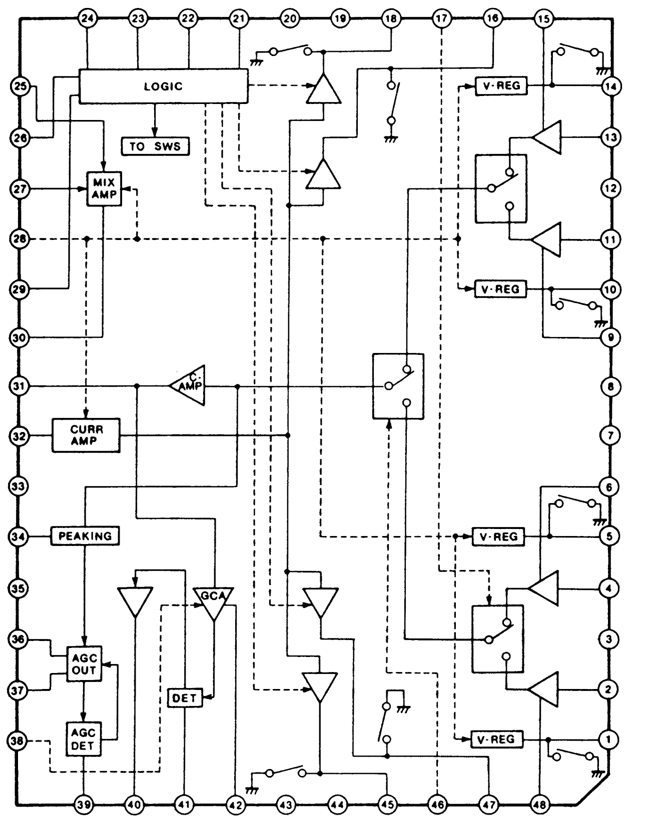
MAIN SIGNAL PATH IN REC MODE MAIN SIGNAL PATH IN PLAYBACK MODE


(TO LUMI.& CHRO.)
Rec C
H SW
(TO POWER)
VIDEO 9V
REG 5V
R5048 2200
TL5001
TL5002
R5047 10
D5004 MA159
D5003 MA132WA
D5002 MA132WA
L3110 15μ
Q3112 2SD2216 (BUFFER)
C3137 22P
R3141 1K
R3142 4700
L3115 100μ
C3140 56P
R3153 1200
C3132 0.01
R3134 3300
QR3103 UN9211 (VHS Ⓗ:ON)
TL5003
IC5001-㉑ REC 3.2Vp-p (20msec./div.)
IC5001-㉒ REC 3.2Vp-p (20msec./div.)
IC5001-㉓ REC 3.2Vp-p (20msec./div.)
IC5001-㉔ REC 3.2Vp-p (20msec./div.)
L5001 100μ
R5011 22K
R5012 22K
R5013 22K
R5014 22K
C5016 6.3V10
C5017 0.01
R5022 22K
R5023 1200
C5018 1
IC5001-⑰ PLAY 3.9Vp-p (V)
R5051 4700
R5025 680
R5026 680
IC5001-㉚ REC 0.4Vp-p (H) COLOUR BAR
C5005 0.01
C5006 4700P
C5007 0.01
C5008 4700P
R5015 2200
R5016 1000
L5002 100u
R5017 18K
C5009 0.1
R5018 1000
C5013 0.01
C5010 6.3V10
C5011 0.01
C5012 16V1
L5003 47μ
L3105 47μ
C3117 47P
R3119 560
R3120 10K
C3118 0.01
R3117 1200
R3118 560
Q3104 2SC4627
R3121 10K
IC5001
AN3345FAS
SW4 SW3 SW2 SW1 VCC
REC SW3 ·C
REC CTL
REC·Y
D.REC.Ⓛ
REC CTL
MIX OUT
PB·C
CURR.AMP
REAKING AMP
PB·Y
GAIN CONT 1
ENV OUT
GAIN CONT2
AUTO TRAC VCC
HA SW
REC OUT CH4
REC OUT CH3
CH4 BIAS
REC OUT CH1
REC OUT CH2
H.SW
CH1 BIAS
CH1
CH2
CH2 BIAS
PB.VCC
CH3 BIAS
CH3
CH4
C5019 0.01
C5020 10P
C5021 10P
C5022 0.01
R5028 1200
C5023 1
R5029 1200
C5025 1u
C5026 0.01
C5027 10P
C5028 10P
C5029 0.01
R5054 4700
R5052 4700
R5053 4700
R5024 3900
C5030 0.01
C5031 0.01
R5027 3900
C5014 1μ
C5015 0.01
R5020 10K
R5021 1200
C5046 1
IC5001-⑪, ⑬, ㊻, ㊽ REC 3.4Vp-p (H) COLOUR BAR
R5035 3900
R5036 680
C5035 0.01
R5037 680
C5036 0.01
R5038 3900
Q5009 2SB970X
R5045 4700
R5046 4700
(REG 5V)
C5050 0.1
R5049 39K
R5019 680
R5050 68K
R5030 3900
C5032 0.047
R5031 3900
C5034 0.033
C5033 0.033
Q5003 XN4504 (HEAD SELECT)
QR5002 XP4213 (HEAD SELECT)
P5001
1 FE(S)
2 FE(F)
3 GND
4 R1(F)
5 R1(S)
6 L1(F)
7 L1(S)
8 GND
9 R2(F)
10 R2(S)
11 L2(F)
12 L2(S)
13 GND
FE
R1
L1
R2
L2
R5033 3900
Q5006 XN4504 (HEAD SELECT)
QR5003 XN4213 (HEAD SELECT)
R5034 3900
(TO LUMI.& CHRO.)
HA SW
L5004 100μ
C5038 0.1
C5039 120P
R5040 10K
R5041 270
R5043 4.7
Q5008 2SA812
R5042 180
C5040 150P
18K R5039
C5041 0.1
L5005 12u
C5042 39P
Q5007 2SA812
C5044 0.033
C5045 0.033
(ROTARY ERASE OSC)
IC5001-㊹ PLAY 4.3Vp-p (V)
4
5
6
7
8
9
10

NOTE: (H) MEANS H • RATE
(V) MEANS V • RATE

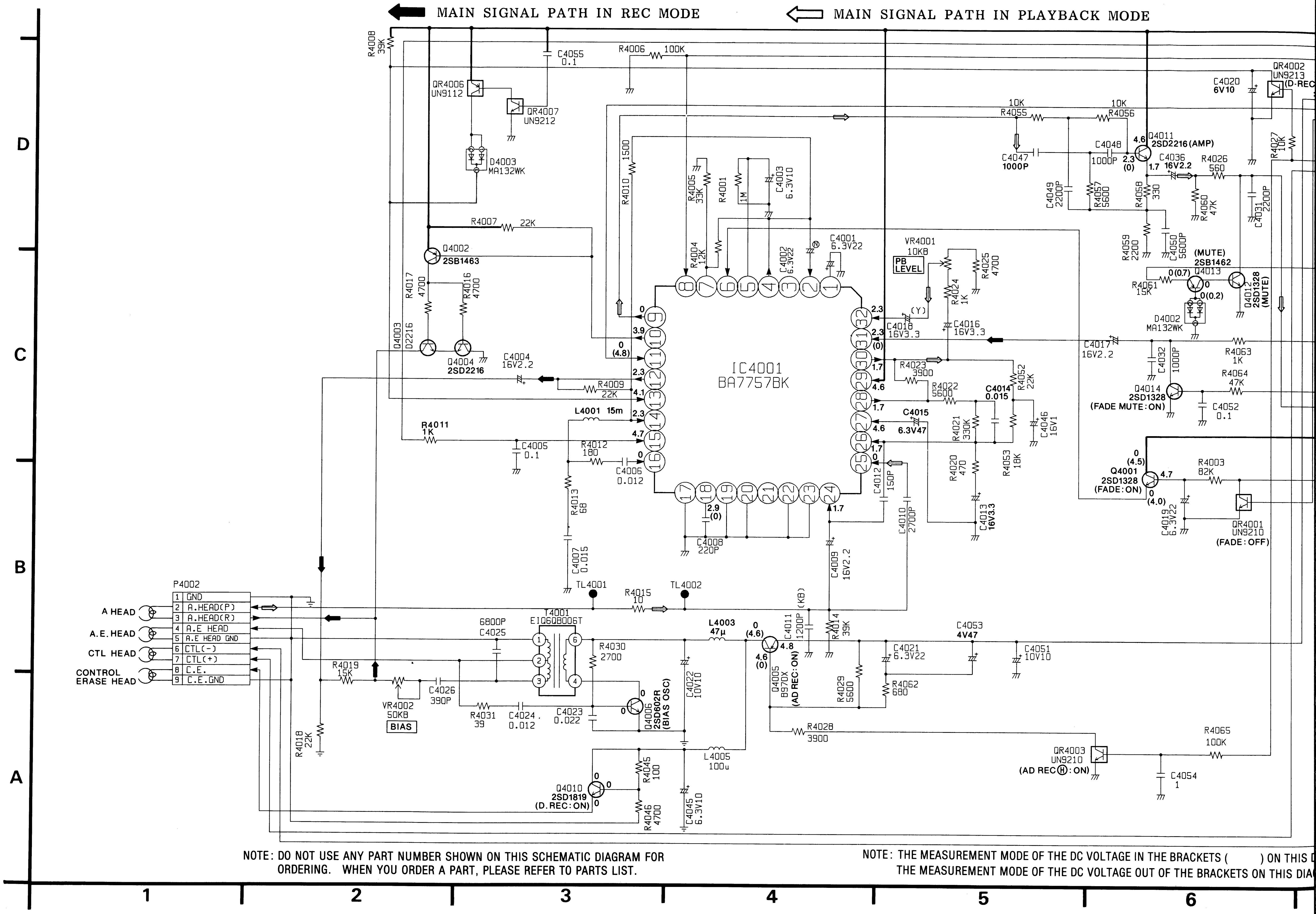
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

IC5001 (AN3345FAS)


LOGIC
TO SWS
MIX AMP
AMP
CURR AMP
PEAKING
AGC OUT
AGC DET
GCA
DET
V-REG
V-REG
V-REG
V-REG

Next Page:
AUDIO Section

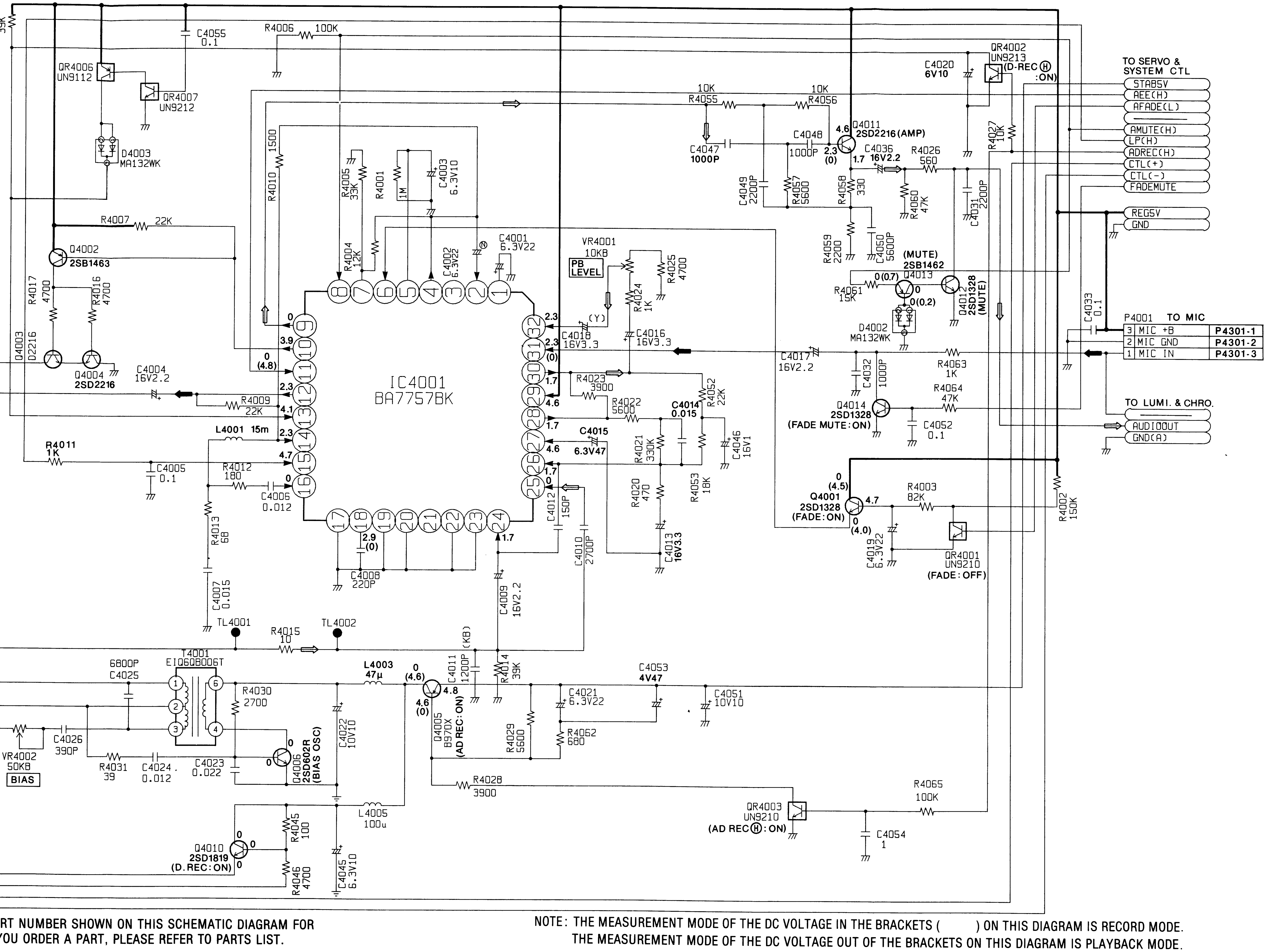
3-20. AUDIO SCHEMATIC DIAGRAM


MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
D
C
B
A
1
2
3
4
5
6
R4008 39K
C4055 0.1
R4006 100K
QR4006 UN9112
QR4007 UN9212
D4003 MA132WK
R4010 1500
R4005 33K
R4001 1M
C4003 6.3V10
R4007 22K
Q4002 2SB1463
R4004 12K
C4002 6.3V22
C4001 6.3V22
R4017 4700
R4016 4700
D4003 D2216
Q4004 2SD2216
C4004 16V2.2
R4009 22K
L4001 15m
R4011 1K
C4005 0.1
R4012 180
C4006 0.012
R4013 68
C4007 0.015
IC4001 BA7757BK
VR4001 10KB
PB LEVEL
R4025 4700
R4024 1K
C4018 16V3.3
C4016 16V3.3
R4023 3900
R4022 5600
C4014 0.015
R4052 22K
C4015 6.3V47
C4046 16V1
R4021 330K
R4020 470
R4053 18K
C4013 16V3.3
C4012 150P
C4010 2700P
C4008 220P
C4009 16V2.2
TL4001
TL4002
R4015 10
R4055 10K
R4056 10K
C4047 1000P
C4048 1000P
Q4011 2SD2216 (AMP)
C4036 16V2.2
R4026 560
C4049 2200P
R4057 5600
R4058 330
R4060 47K
C4031 2200P
R4059 2200
C4050 5600P
(MUTE) 2SB1462 Q4013
R4061 15K
D4002 MA132WK
Q4012 2SD1328 (MUTE)
C4020 6V10
QR4002 UN9213 (D·REC
R4027 10K
C4017 16V2.2
C4032 1000P
R4063 1K
R4064 47K
Q4014 2SD1328 (FADE MUTE:ON)
C4052 0.1
Q4001 2SD1328 (FADE:ON)
R4003 82K
C4019 6.3V22
QR4001 UN9210 (FADE:OFF)
P4002
1 GND
2 A.HEAD(P)
3 A.HEAD(R)
4 A.E HEAD
5 A.E HEAD GND
6 CTL(-)
7 CTL(+)
8 C.E.
9 C.E.GND
A HEAD
A.E. HEAD
CTL HEAD
CONTROL ERASE HEAD
T4001 EI060B006T
C4025 6800P
R4019 15K
VR4002 50KB
BIAS
C4026 390P
R4031 39
C4024 0.012
C4023 0.022
R4030 2700
Q4006 2SD602R (BIAS OSC)
R4018 22K
C4022 10V10
L4003 47μ
C4011 1200P (KB)
R4014 39K
Q4005 B970X (AD REC:ON)
R4029 5600
C4021 6.3V22
R4062 680
C4053 4V47
C4051 10V10
R4028 3900
QR4003 UN9210 (AD REC(H):ON)
R4065 100K
C4054 1
L4005 100u
R4045 100
R4046 4700
C4045 6.3V10
Q4010 2SD1819 (D.REC:ON)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIA

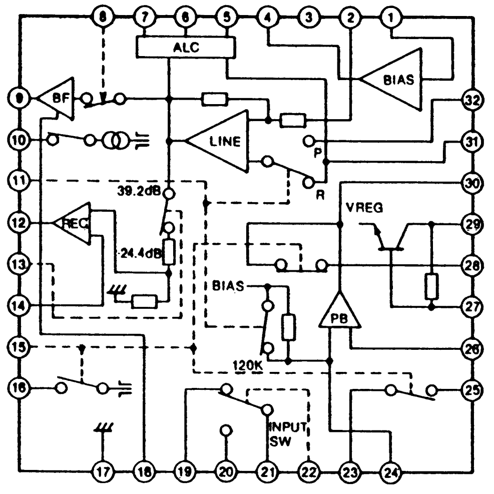
MAIN SIGNAL PATH IN REC MODE   MAIN SIGNAL PATH IN PLAYBACK MODE


IC4001
BA7757BK
QR4006 UN9112
QR4007 UN9212
D4003 MA132WK
Q4002 2SB1463
Q4004 2SD2216
Q4011 2SD2216(AMP)
Q4013 2SB1462 (MUTE)
Q4012 2SD1328 (MUTE)
Q4014 2SD1328 (FADE MUTE:ON)
Q4001 2SD1328 (FADE:ON)
QR4001 UN9210 (FADE:OFF)
QR4002 UN9213 (D-REC Ⓗ:ON)
QR4003 UN9210 (AD REC Ⓗ:ON)
Q4005 B970X (AD REC:ON)
Q4006 2SD602R (BIAS OSC)
Q4010 2SD1819 (D.REC:ON)
D4002 MA132WK
VR4001 10KB
PB LEVEL
VR4002 50KB
BIAS
T4001 E1Q60B006T
L4001 15m
L4003 47μ
L4005 100u
TL4001
TL4002
TO SERVO & SYSTEM CTL
STAB5V
AEE(H)
AFADE(L)
AMUTE(H)
LP(H)
ADREC(H)
CTL(+)
CTL(-)
FADEMUTE
REG5V
GND
P4001 TO MIC
3 MIC +B P4301-1
2 MIC GND P4301-2
1 MIC IN P4301-3
TO LUMI. & CHRO.
AUDIOOUT
GND(A)
3
4
5
6
7

RT NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR
/OU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS (   ) ON THIS DIAGRAM IS RECORD MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE.

IC4001(BA7757BK)


ALC
BIAS
BF
LINE
P
R
39.2dB
VREG
REC
24.4dB
BIAS
PB
120K
INPUT SW

MAIN C.B.A. ADDRESS INFORMATION

SERVO & SYSTEM CONTROL Section	
Transistor	
Q6001	E-3 ©
Transistor & Resistor	
QR6001	E-3 ©
QR6002	E-3 ©
QR6003	D-14 Ⓕ
QR6004	E-13 Ⓕ
QR6005	F-11 Ⓕ
QR6006	F-3 ©
QR6010	D-14 Ⓕ
QR6013	F-3 ©
QR6015	E-4 ©
QR6018	F-13 Ⓕ
QR6019	F-13 Ⓕ
Integrated Circuit	
IC6001	F-11 Ⓕ
IC6002	E-2 ©
IC6004	F-2 ©
IC6005	E-3 ©
IC6006	E-12 Ⓕ
IC6007	F-2 ©
IC6009	F-12 Ⓕ
Tesp Point	
CP6001	F-4 ©
CP6201	E-5 ©
CP6202	E-5 ©
CP6203	E-4 ©
CP6204	E-4 ©
CP6205	F-4 ©
CP6206	E-4 ©
CP6207	B-5 ©
CP6208	E-4 ©
CP6209	B-5 ©
CP6210	A-5 ©
CP6211	F-3 ©
CP6212	F-3 ©
CP6214	E-5 ©
CP6215	E-4 ©
TL600A	D-4 ©
TL6001	F-5 ©
TL6002	F-4 ©
TL6003	F-4 ©
TL6004	F-4 ©
TL6011	F-5 ©
TL6202	E-4 ©
TL6203	D-4 ©
TP6201	F-4 ©
TP6203	D-5 ©
TP6204	E-5 ©
Adjustment	
VR6001	E-4 ©
VR6201	F-5 ©
Connector	
P6002	E-1 ©
P6003	F-2 ©
P6004	F-3 ©
P6005	F-4 ©
P6201	E-11 Ⓕ

ADDRESS INFORMATION
©... COMPONENT SIDE
Ⓕ... FOIL SIDE

SUB SYSTEM CONTROL Section	
Transistor & Resistor	
QR6001	D-13 Ⓕ
Integrated Circuit	
IC6101	E-13 Ⓕ
IC6103	F-13 Ⓕ
IC6104	E-2 ©
IC6105	E-2 ©
Tesp Point	
CP6101	E-2 ©
CP6102	B-4 ©
CP6104	D-4 ©
TL6101	E-1 ©
Adjustment	
C6102	E-2 ©
C6108	E-2 ©
Connector	
P6102	F-4 ©
P6103	E-2 ©

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AUDIO Section	
Transistor	
Q4001	C-10 Ⓕ
Q4002	C-9 Ⓕ
Q4003	D-7 ©
Q4004	D-9 Ⓕ
Q4005	C-8 Ⓕ
Q4006	D-8 Ⓕ
Q4010	D-10 Ⓕ
Q4011	C-6 ©
Q4012	B-8 Ⓕ
Q4013	C-9 Ⓕ
Q4014	D-9 Ⓕ
Transistor & Resistor	
QR4001	C-10 Ⓕ
QR4002	C-9 Ⓕ
QR4003	C-9 Ⓕ
QR4006	C-9 Ⓕ
QR4007	C-9 Ⓕ
Integrated Circuit	
IC4001	D-6 ©
Test Point	
TL4001	D-6 ©
TL4002	D-6 ©
Adjustment	
VR4001	C-6 ©
VR4002	D-7 ©
Connector	
P4001	C-7 ©
P4002	D-6 ©

ADDRESS INFORMATION
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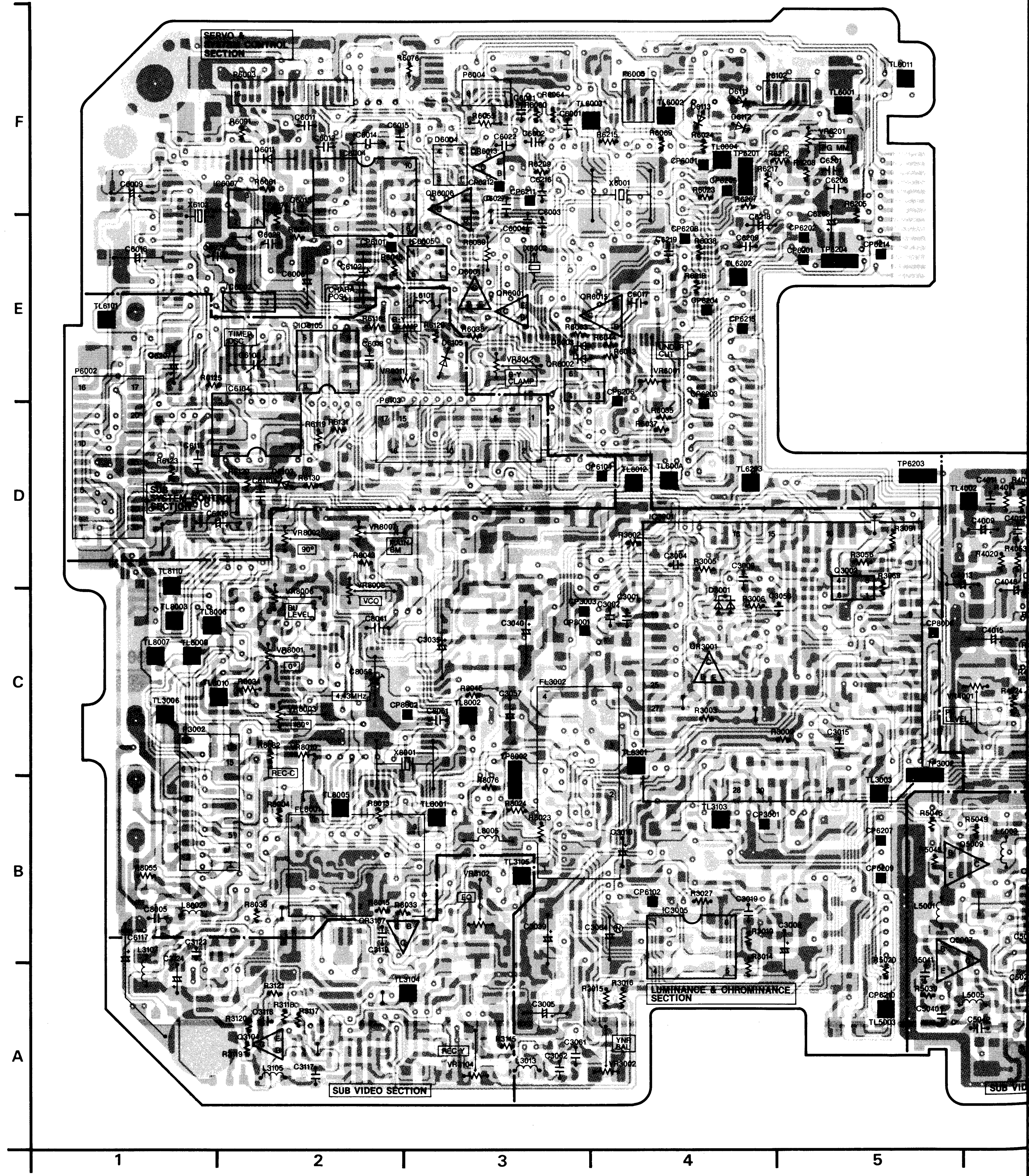
LUMINANCE & CHROMINANCE Section	
Transistor	
Q3001	C-14 Ⓕ
Q3002	D-5 ©
Q3006	B-11 Ⓕ
Q3007	D-11 Ⓕ
Q8002	B-14 Ⓕ
Q8003	B-13 Ⓕ
Q8007	C-12 Ⓕ
Q8009	D-13 Ⓕ
Q8010	D-14 Ⓕ
Q8011	D-14 Ⓕ
Q8012	C-14 Ⓕ
Transistor & Resistor	
QR3001	C-4 ©
QR3010	C-14 Ⓕ
QR3019	C-12 Ⓕ
QR3020	C-11 Ⓕ
QR8002	B-12 Ⓕ
QR8003	C-14 Ⓕ
QR8004	C-14 Ⓕ
Integrated Circuit	
IC3001	D-4 ©
IC3002	B-11 Ⓕ
IC3004	D-10 Ⓕ
IC3005	B-4 ©
IC8001	C-13 Ⓕ
Test Point	
CP3001	B-4 ©
CP3003	C-3 ©
CP8001	C-3 ©
CP8002	C-3 ©
CP8006	C-5 ©
TL3003	C-5 ©
TL3005	B-7 ©
TL3006	C-1 ©
TL8001	B-3 ©
TL8002	C-3 ©
TL8003	C-1 ©
TL8005	B-2 ©
TL8007	C-1 ©
TL8008	C-1 ©
TL8009	C-1 ©
TL8010	C-1 ©
TL8012	D-4 ©
TL8110	D-1 ©
TL8301	C-4 ©
TP3002	C-5 ©
TP8002	C-3 ©
Adjustment	
C8058	C-2 ©
VR3002	A-4 ©
VR8001	C-2 ©
VR8002	D-2 ©
VR8003	C-2 ©
VR8006	C-2 ©
VR8007	D-2 ©
VR8008	D-2 ©
VR8010	C-2 ©
VR8011	E-2 ©
VR8012	E-3 ©
Connector	
P3001	B-7 ©
P3002	C-1 ©

ADDRESS INFORMATION
©... COMPONENT SIDE
Ⓕ... FOIL SIDE

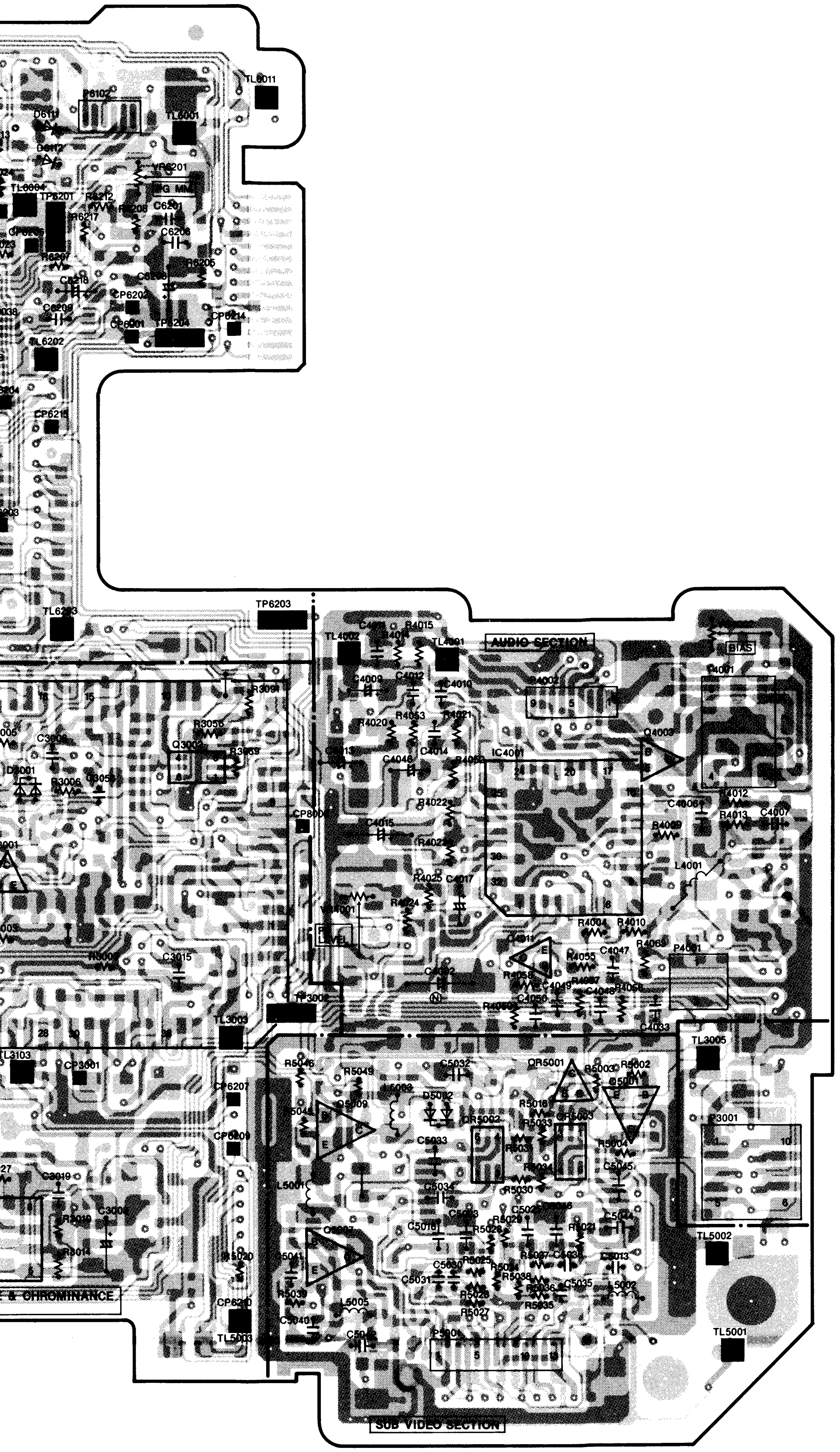
SUB VIDEO Section	
Transistor	
Q3104	A-2 ©
Q3106	B-12 Ⓕ
Q3108	A-13 Ⓕ
Q3110	A-12 Ⓕ
Q3112	A-12 Ⓕ
Q5001	B-7 ©
Q5003	A-9 Ⓕ
Q5006	A-9 Ⓕ
Q5007	B-5 ©
Q5008	B-10 Ⓕ
Q5009	B-6 ©
Transistor & Resistor	
QR3101	B-12 Ⓕ
QR3103	A-12 Ⓕ
QR3107	B-2 ©
QR5001	B-6 ©
QR5002	B-6 ©
QR5003	B-6 ©
Integrated Circuit	
IC5001	B-9 Ⓕ
Test Point	
TL3103	B-4 ©
TL3104	A-3 ©
TL3105	B-3 ©
TL5001	A-7 ©
TL5002	B-7 ©
TL5003	A-5 ©
Adjustment	
VR3102	B-3 ©
VR3104	A-3 ©
Connector	
P5001	A-6 ©

ADDRESS INFORMATION
©... COMPONENT SIDE
Ⓕ... FOIL SIDE

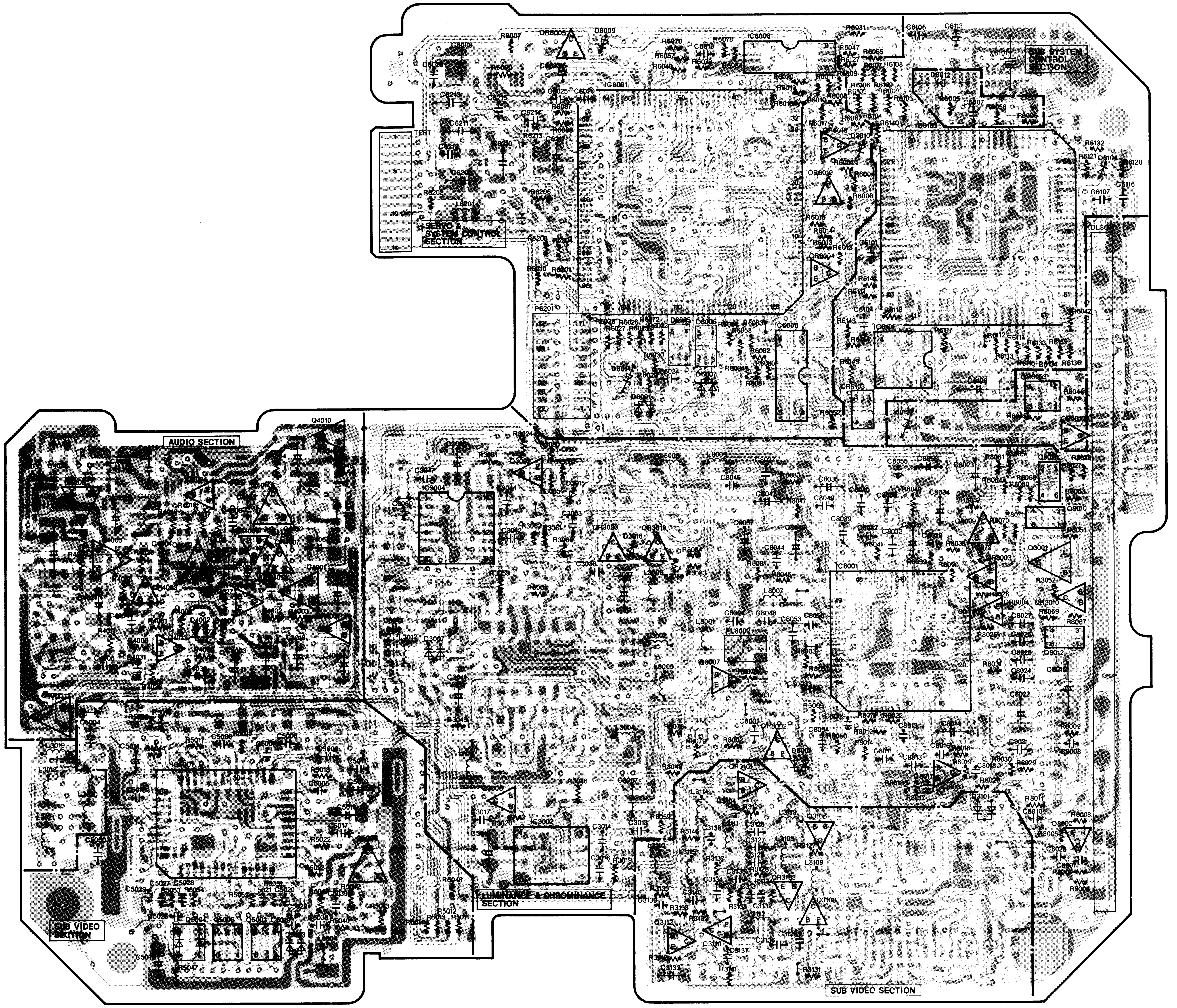
3-21. MAIN (SERVO & SYSTEM CONTROL, SUB SYSTEM CONTROL, LUMINANCE &


SERVO & SYSTEM CONTROL SECTION
SUB SYSTEM CONTROL SECTION
LUMINANCE & CHROMINANCE SECTION
SUB VIDEO SECTION
F
E
D
C
B
A
1
2
3
4
5

CONTROL, LUMINANCE & CHROMINANCE, SUB VIDEO, AUDIO Section) C.B.A. (VEP06806A)


AUDIO SECTION
BIAS
& CHROMINANCE
SUB VIDEO SECTION

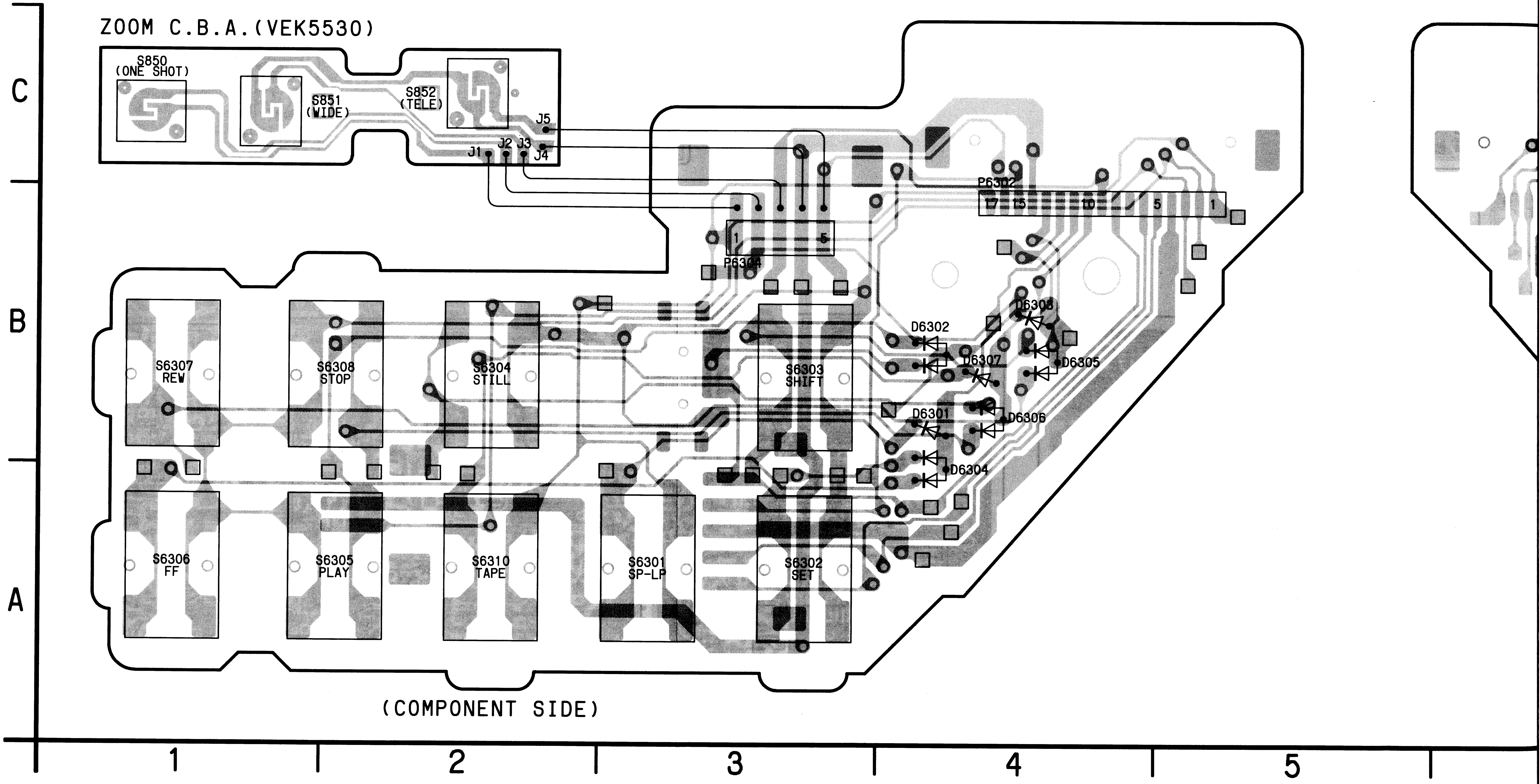
(COMPONENT SIDE)


SERVO & SYSTEM CONTROL SECTION
SUB SYSTEM CONTROL SECTION
AUDIO SECTION
SUB VIDEO SECTION
LUMINANCE & CHROMINANCE SECTION
SUB VIDEO SECTION

(FOIL SIDE)

5 6 7 8 9 10 11 12 13 14

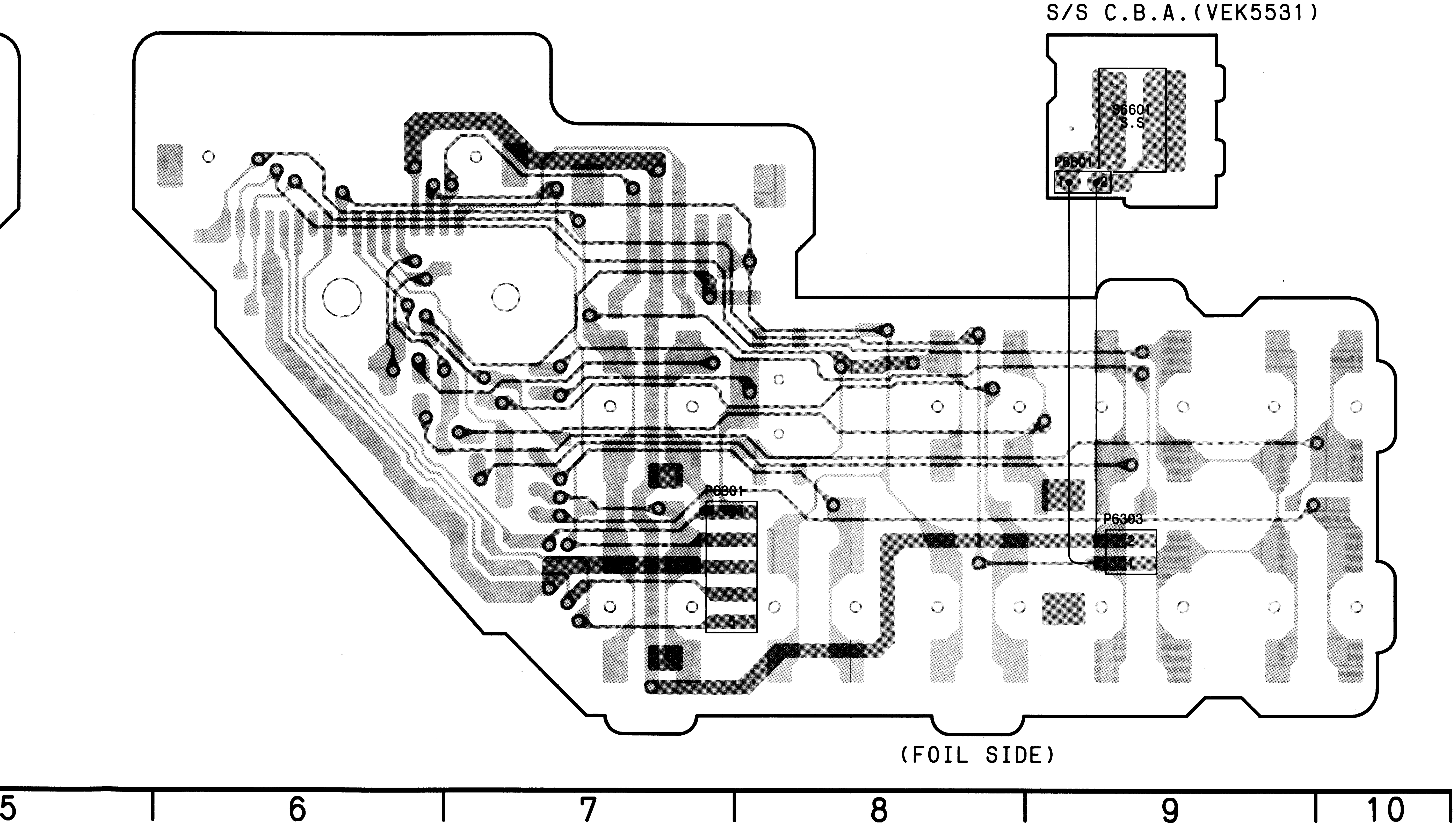
3-22. VTR OPERATION C.B.A. (VEP06807A)


ZOOM C.B.A.(VEK5530)
S850 (ONE SHOT)
S851 (WIDE)
S852 (TELE)
J1
J2
J3
J4
J5
P6302
17
15
10
5
1
P6304
1
5
S6307 REW
S6308 STOP
S6304 STILL
S6303 SHIFT
S6306 FF
S6305 PLAY
S6310 TAPE
S6301 SP-LP
S6302 SET
D6301
D6302
D6303
D6304
D6305
D6306
D6307
(COMPONENT SIDE)
A
B
C
1
2
3
4
5

Back Page:
MAIN C.B.A. Section

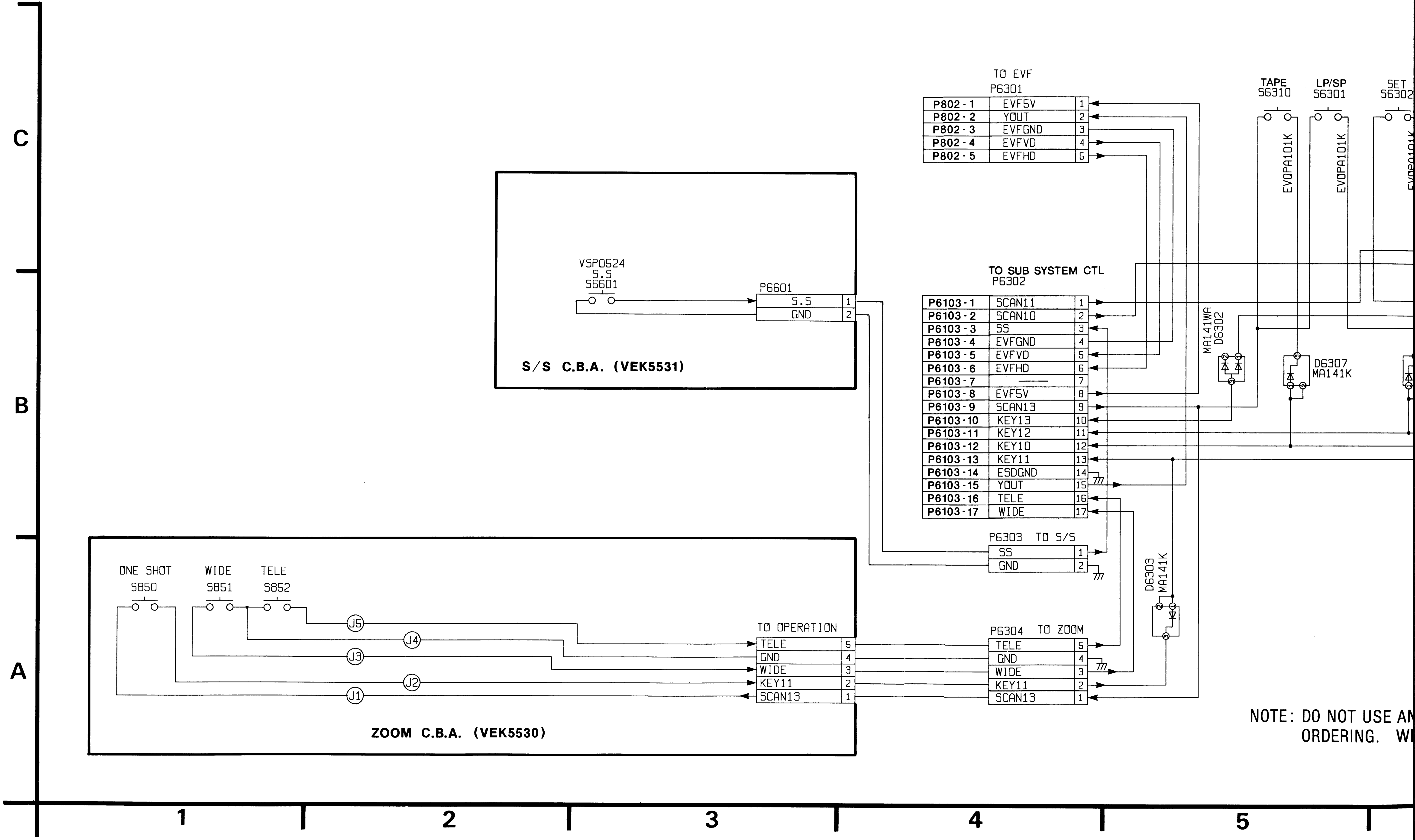
VTR OPERATION C.B.A.	
Connector	
P6301	A-7 Ⓕ
P6302	B-4 Ⓒ
P6303	A-9 Ⓕ
P6304	B-3 Ⓒ

ADDRESS INFORMATION
Ⓒ ... COMPONENT SIDE
Ⓕ ... FOIL SIDE

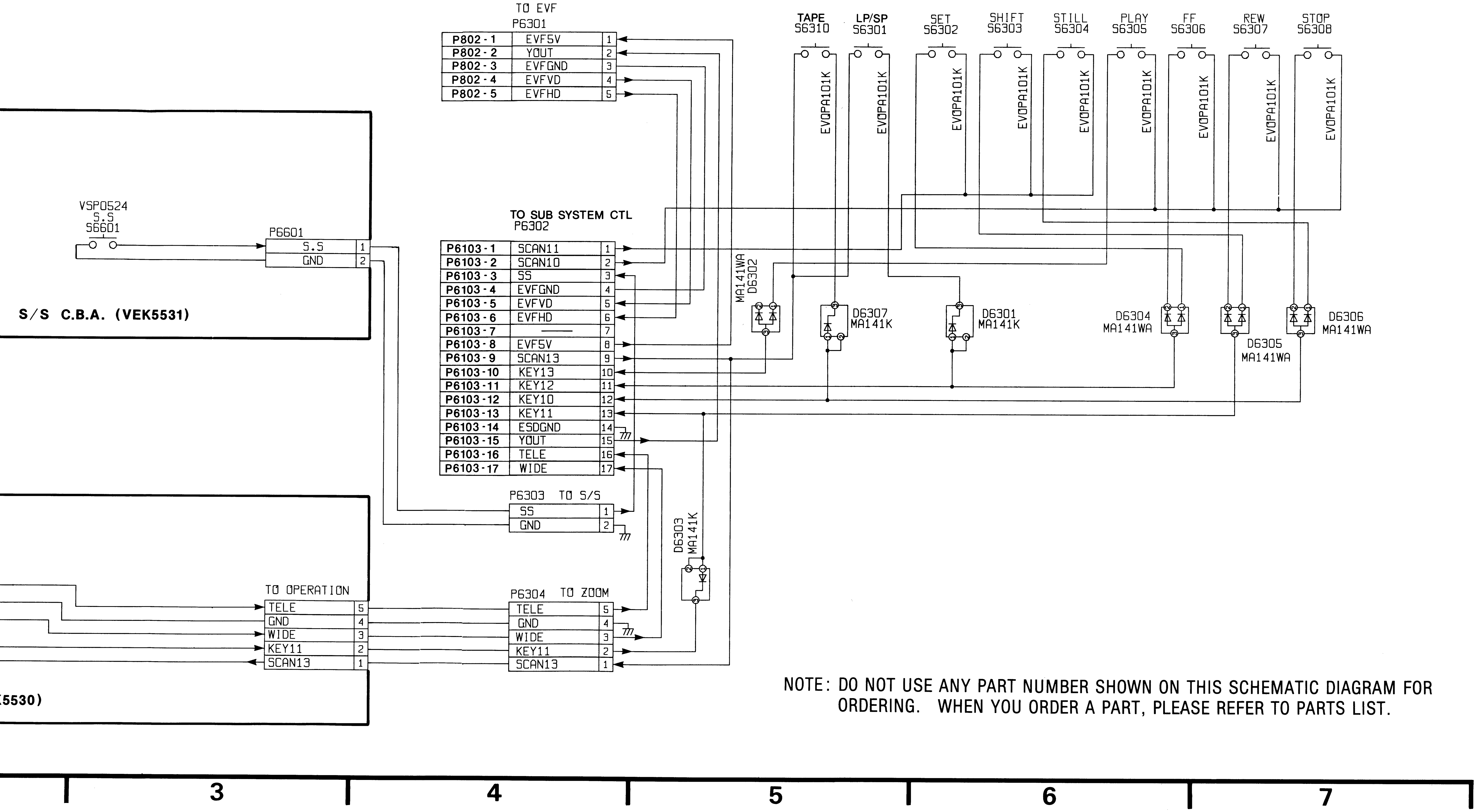

S/S C.B.A.(VEK5531)
S6601
S.S
P6601
1
2
P6301
5
P6303
2
1
5
6
7
8
9
10

(FOIL SIDE)

3-23. VTR OPERATION SCHEMATIC DIAGRAM


C
B
A
1
2
3
4
5
TO EVF
P6301
P802 - 1
EVF5V
P802 - 2
YOUT
P802 - 3
EVFGND
P802 - 4
EVFVD
P802 - 5
EVFHD
TAPE
S6310
EVQPA101K
LP/SP
S6301
EVQPA101K
SET
S6302
VSP0524
S.S
S6601
P6601
S.S
GND
S/S C.B.A. (VEK5531)
TO SUB SYSTEM CTL
P6302
P6103 - 1
SCAN11
P6103 - 2
SCAN10
P6103 - 3
SS
P6103 - 4
EVFGND
P6103 - 5
EVFVD
P6103 - 6
EVFHD
P6103 - 7
P6103 - 8
EVF5V
P6103 - 9
SCAN13
P6103 - 10
KEY13
P6103 - 11
KEY12
P6103 - 12
KEY10
P6103 - 13
KEY11
P6103 - 14
ESDGND
P6103 - 15
YOUT
P6103 - 16
TELE
P6103 - 17
WIDE
MA141WA
D6302
D6307
MA141K
P6303 TO S/S
SS
GND
D6303
MA141K
ONE SHOT
S850
WIDE
S851
TELE
S852
J5
J4
J3
J2
J1
TO OPERATION
TELE
GND
WIDE
KEY11
SCAN13
ZOOM C.B.A. (VEK5530)
P6304 TO ZOOM
TELE
GND
WIDE
KEY11
SCAN13

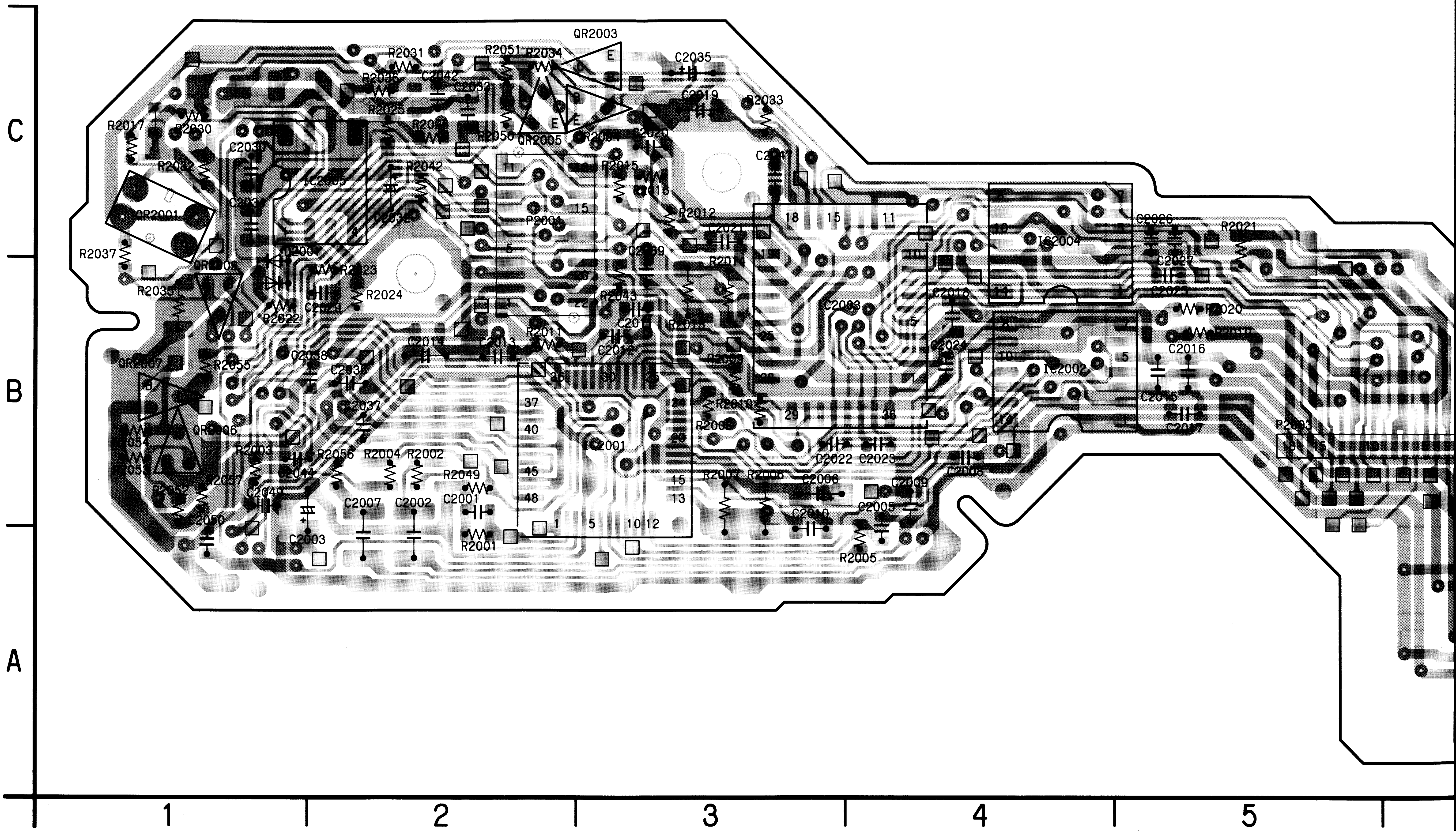
NOTE: DO NOT USE AN
ORDERING. W

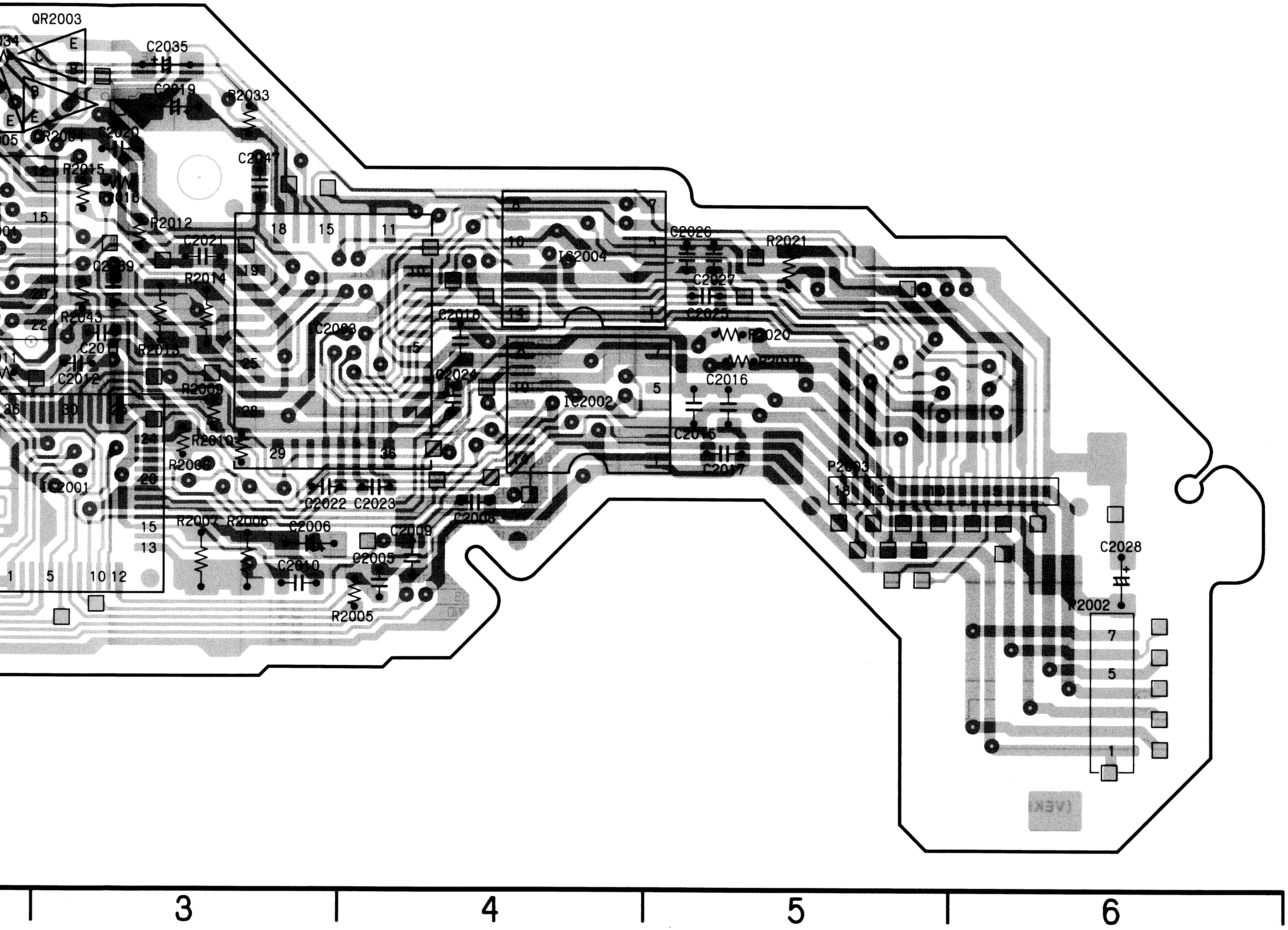

TO EVF
P6301
P802-1 EVF5V 1
P802-2 YOUT 2
P802-3 EVFGND 3
P802-4 EVFVD 4
P802-5 EVFHD 5
TAPE S6310
LP/SP S6301
SET S6302
SHIFT S6303
STILL S6304
PLAY S6305
FF S6306
REW S6307
STOP S6308
EVQPA101K
VSP0524
S.S
S6601
P6601
S.S 1
GND 2
S/S C.B.A. (VEK5531)
TO SUB SYSTEM CTL
P6302
P6103-1 SCAN11 1
P6103-2 SCAN10 2
P6103-3 SS 3
P6103-4 EVFGND 4
P6103-5 EVFVD 5
P6103-6 EVFHD 6
P6103-7 —— 7
P6103-8 EVF5V 8
P6103-9 SCAN13 9
P6103-10 KEY13 10
P6103-11 KEY12 11
P6103-12 KEY10 12
P6103-13 KEY11 13
P6103-14 ESDGND 14
P6103-15 YOUT 15
P6103-16 TELE 16
P6103-17 WIDE 17
MA141WA D6302
D6307 MA141K
D6301 MA141K
D6304 MA141WA
D6305 MA141WA
D6306 MA141WA
P6303 TO S/S
SS 1
GND 2
D6303 MA141K
TO OPERATION
TELE 5
GND 4
WIDE 3
KEY11 2
SCAN13 1
P6304 TO ZOOM
TELE 5
GND 4
WIDE 3
KEY11 2
SCAN13 1
(5530)
3
4
5
6
7

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

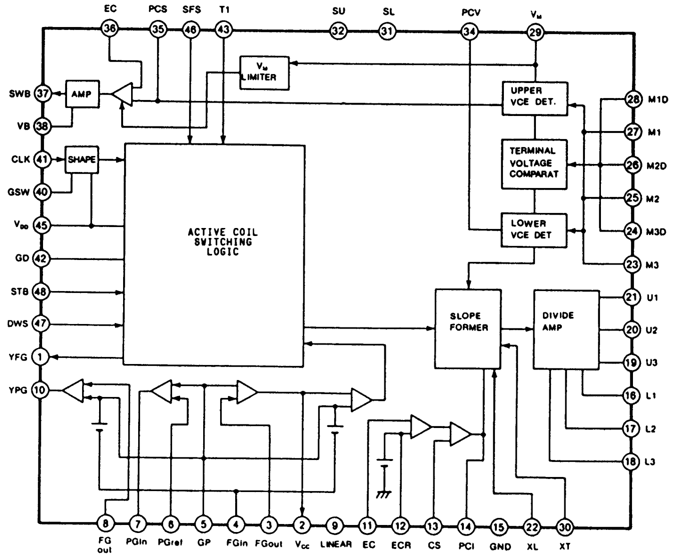
Next Page:
DRIVE Section

3-24. DRIVE C.B.A. (VEP02379B)

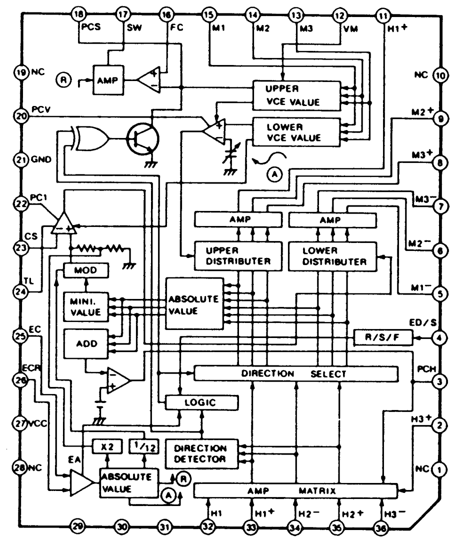

C
B
A
1
2
3
4
5
QR2003
R2031
R2051
R2034
C2035
R2036
C2042
C2033
C2019
R2033
R2017
R2030
R2025
R2029
R2050
QR2005
R2001
C2020
C2047
C2030
R2032
R2042
IC2005
R2015
R2016
QR2001
C2031
C2032
P2001
R2012
C2021
C2026
R2021
IC2004
R2037
D2001
QR2002
R2023
C2039
R2014
C2027
R2035
R2024
C2029
R2022
R2043
C2025
C2018
R2020
C2038
C2014
C2013
R2011
C2012
R2013
C2024
R2019
C2016
IC2002
QR2007
R2055
C2036
R2009
R2010
C2015
C2017
C2037
R2008
QR2006
R2054
R2053
R2003
R2056
R2004
R2002
IC2001
C2022
C2023
C2008
P2003
C2044
R2049
R2007
R2006
C2006
C2009
R2052
R2057
C2048
C2001
C2007
C2002
C2010
C2005
C2050
C2003
R2005
E
B
C
11
15
5
1
22
18
19
25
28
29
36
10
8
7
14
24
20
13
37
40
45
48
12
16


QR2003
C
E
B
E
E
C2035
C2019
R2033
R2004
C2020
C2047
R2015
R2016
R2012
C2021
C2039
R2014
R2043
C2011
R2013
C2012
R2003
R2010
R2009
IC2001
R2007
R2006
C2006
C2010
C2005
R2005
C2009
C2008
C2022
C2023
C2003
C2018
C2024
IC2004
IC2002
C2026
C2027
C2025
R2021
R2020
R2019
C2016
C2015
C2017
P2003
C2028
P2002
18
15
11
19
25
28
29
36
10
5
7
8
14
1
15
13
1
5
10
12
15
20
22
24
26
30
7
5
1
3
4
5
6

IC2001 (AN3893FHP)


EC 36
PCS 35
SFS 46
T1 43
SU 32
SL 31
PCV 34
V_M 29
V_M LIMITER
SWB 37
VB 38
CLK 41
GSW 40
V_{DD} 45
GD 42
STB 48
DWS 47
YFG 1
YPG 10
AMP
SHAPE
ACTIVE COIL SWITCHING LOGIC
UPPER VCE DET.
TERMINAL VOLTAGE COMPARAT
LOWER VCE DET
SLOPE FORMER
DIVIDE AMP
28 M1D
27 M1
26 M2D
25 M2
24 M3D
23 M3
21 U1
20 U2
19 U3
16 L1
17 L2
18 L3
8 FG out
7 PGin
6 PGref
5 GP
4 FGin
3 FGout
2 V_{CC}
9 LINEAR
11 EC
12 ECR
13 CS
14 PCI
15 GND
22 XL
30 XT

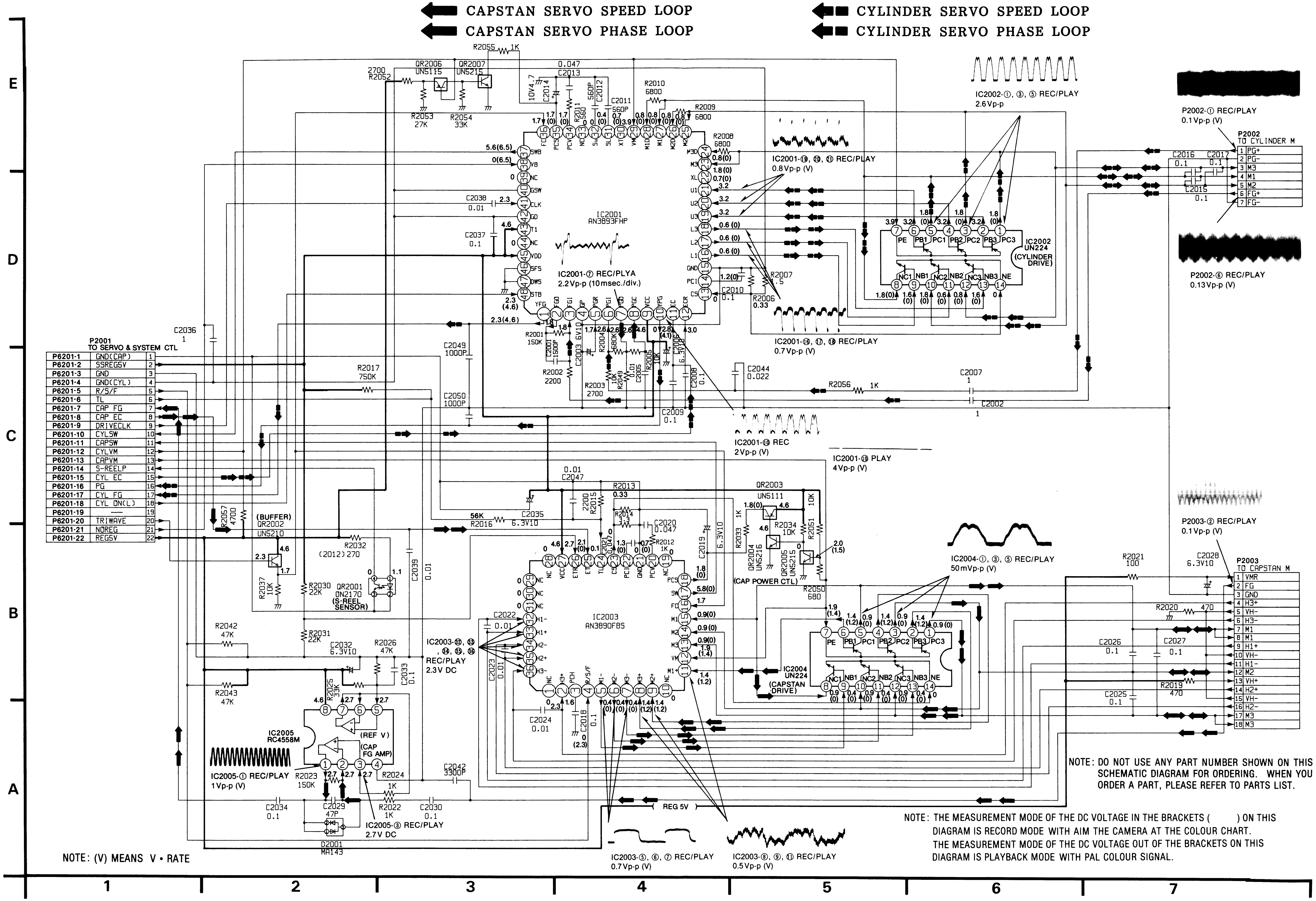
IC2003 (AN3890FBS)


18 PCS
17 SW
16 FC
15 M1
14 M2
13 M3
12 VM
11 H1+
19 NC
20 PCV
21 GND
22 PC1
23 CS
24 TL
25 EC
26 ECR
27 VCC
28 NC
NC 10
M2+ 9
M3+ 8
M3− 7
M2− 6
M1− 5
ED/S 4
PCH 3
H3+ 2
NC 1
R
A
AMP
UPPER VCE VALUE
LOWER VCE VALUE
AMP
AMP
UPPER DISTRIBUTER
LOWER DISTRIBUTER
MOD
MINI. VALUE
ABSOLUTE VALUE
ADD
R/S/F
DIRECTION SELECT
LOGIC
X2
1/12
DIRECTION DETECTOR
EA
ABSOLUTE VALUE
AMP MATRIX
H1
H1+
H2−
H2+
H3−
29
30
31
32
33
34
35
36

DRIVE C.B.A.	
Transistor & Resistor	
QR2001	C-1
QR2002	B-1
QR2003	C-3
QR2004	C-3
QR2005	C-2
QR2006	B-1
QR2007	B-1
Integrated Circuit	
IC2001	B-3
IC2002	B-4
IC2003	B-3
IC2004	C-4
IC2005	C-2
Connector	
P2001	C-2
P2002	A-6
P2003	B-5

ADDRESS INFORMATION

3-25. DRIVE SCHEMATIC DIAGRAM

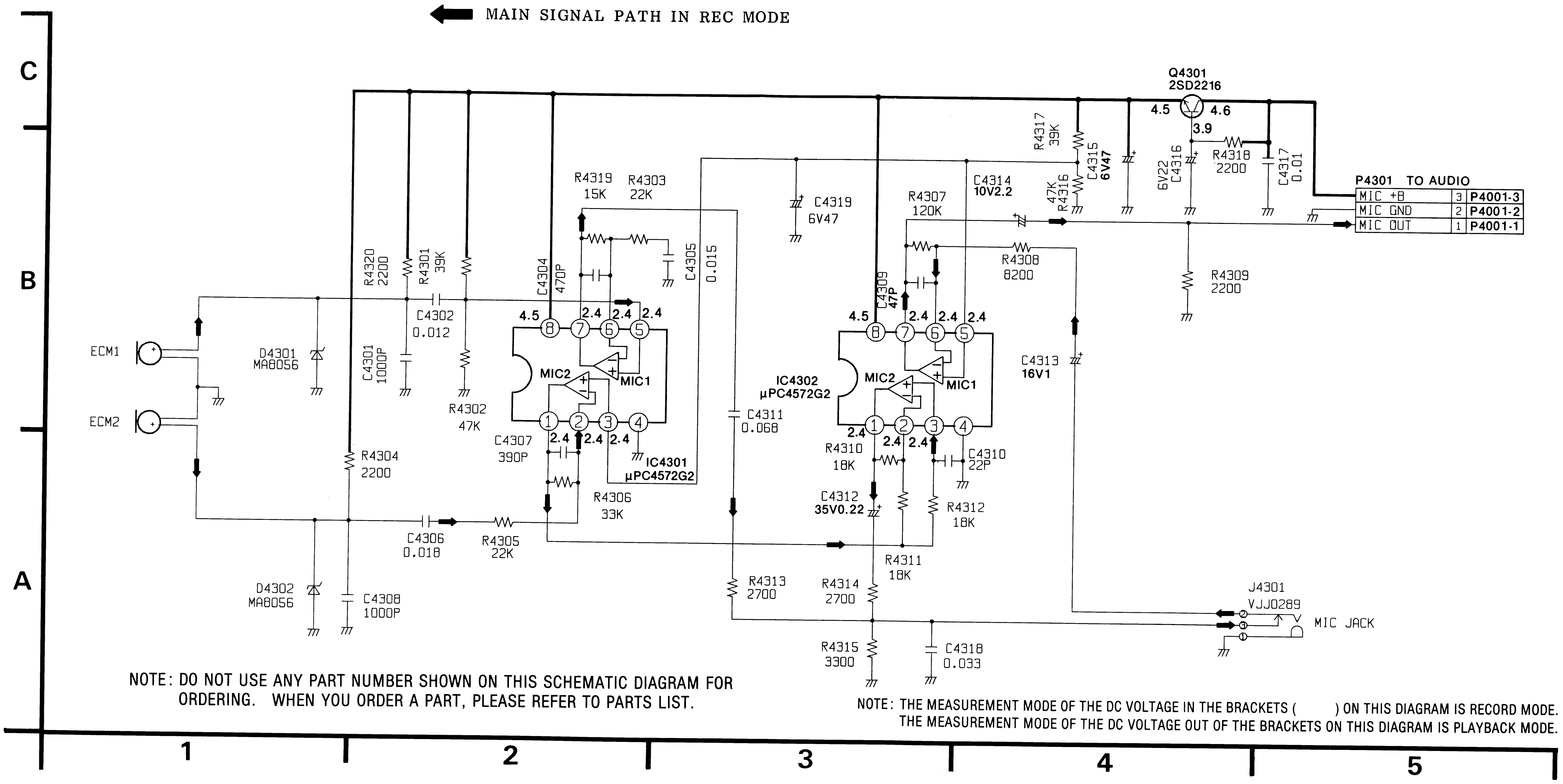

CAPSTAN SERVO SPEED LOOP
CAPSTAN SERVO PHASE LOOP
CYLINDER SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP
E
D
C
B
A
1
2
3
4
5
6
7
IC2001
AN3893FHP
IC2002
UN224
(CYLINDER DRIVE)
IC2003
AN3890FBS
IC2004
UN224
(CAPSTAN DRIVE)
IC2005
RC4558M
(REF V)
(CAP FG AMP)
QR2001
ON2170
(S-REEL SENSOR)
QR2002
UN5210
(BUFFER)
QR2003
UN5111
QR2004
UN5216
QR2005
UN5215
(CAP POWER CTL)
QR2006
UN5115
QR2007
UN5215
D2001
MA143
P2001
TO SERVO & SYSTEM CTL
P6201-1 GND(CAP) 1
P6201-2 5SREG5V 2
P6201-3 GND 3
P6201-4 GND(CYL) 4
P6201-5 R/S/F 5
P6201-6 TL 6
P6201-7 CAP FG 7
P6201-8 CAP EC 8
P6201-9 DRIVECLK 9
P6201-10 CYLSW 10
P6201-11 CAPSW 11
P6201-12 CYLVM 12
P6201-13 CAPVM 13
P6201-14 S-REELP 14
P6201-15 CYL EC 15
P6201-16 PG 16
P6201-17 CYL FG 17
P6201-18 CYL ON(L) 18
P6201-19 — 19
P6201-20 TRIWAVE 20
P6201-21 NOREG 21
P6201-22 REG5V 22
P2002
TO CYLINDER M
1 PG+
2 PG−
3 M3
4 M1
5 M2
6 FG+
7 FG−
P2003
TO CAPSTAN M
1 VMR
2 FG
3 GND
4 H3+
5 VH−
6 H3−
7 M1
8 M1
9 H1+
10 VH−
11 H1−
12 M2
13 VH+
14 H2+
15 VH−
16 H2−
17 M3
18 M3
IC2002-①, ③, ⑤ REC/PLAY
2.6Vp-p
P2002-① REC/PLAY
0.1Vp-p (V)
P2002-⑥ REC/PLAY
0.13Vp-p (V)
IC2001-⑲, ⑳, ㉑ REC/PLAY
0.8Vp-p (V)
IC2001-⑦ REC/PLYA
2.2Vp-p (10msec./div.)
IC2001-⑯, ⑰, ⑱ REC/PLAY
0.7Vp-p (V)
IC2001-⑩ REC
2Vp-p (V)
IC2001-⑩ PLAY
4Vp-p (V)
P2003-② REC/PLAY
0.1Vp-p (V)
IC2004-①, ③, ⑤ REC/PLAY
50mVp-p (V)
IC2003-㉜, ㉝, ㉞, ㉟, ㊱ REC/PLAY
2.3V DC
IC2005-① REC/PLAY
1Vp-p (V)
IC2005-③ REC/PLAY
2.7V DC
IC2003-⑤, ⑥, ⑦ REC/PLAY
0.7Vp-p (V)
IC2003-⑧, ⑨, ⑩ REC/PLAY
0.5Vp-p (V)
REG 5V
R2055 1K
R2052 2700
R2053 27K
R2054 33K
C2013 0.047
R2010 6800
R2009 6800
R2008 6800
R2007 1.5
R2006 0.33
C2010 0.1
C2038 0.01
C2037 0.1
C2036 1
C2049 1000P
C2050 1000P
R2017 750K
R2001 150K
R2002 2200
R2003 2700
C2044 0.022
R2056 1K
C2007 1
C2002 1
C2009 0.1
C2016 0.1
C2017 0.1
C2015 0.1
C2047 0.01
R2013 0.33
R2016 56K
C2035 6.3V10
R2014 3.3
C2020 0.047
R2012 1K
R2034 10K
R2050 680
R2021 100
C2028 6.3V10
R2020 470
R2019 470
C2026 0.1
C2027 0.1
C2025 0.1
R2032 (2012) 270
R2037 10K
R2030 22K
R2031 22K
C2039 0.01
R2042 47K
R2043 47K
C2032 6.3V10
R2026 47K
C2033 0.1
R2025 33K
R2023 150K
R2024 1K
R2022 1K
C2042 3300P
C2034 0.1
C2029 47P
C2030 0.1
C2022 0.01
C2023 0.01
C2024 0.01
C2018 0.1
R2057 4700

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART. THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

NOTE: (V) MEANS V • RATE

3-26. MIC SCHEMATIC DIAGRAM

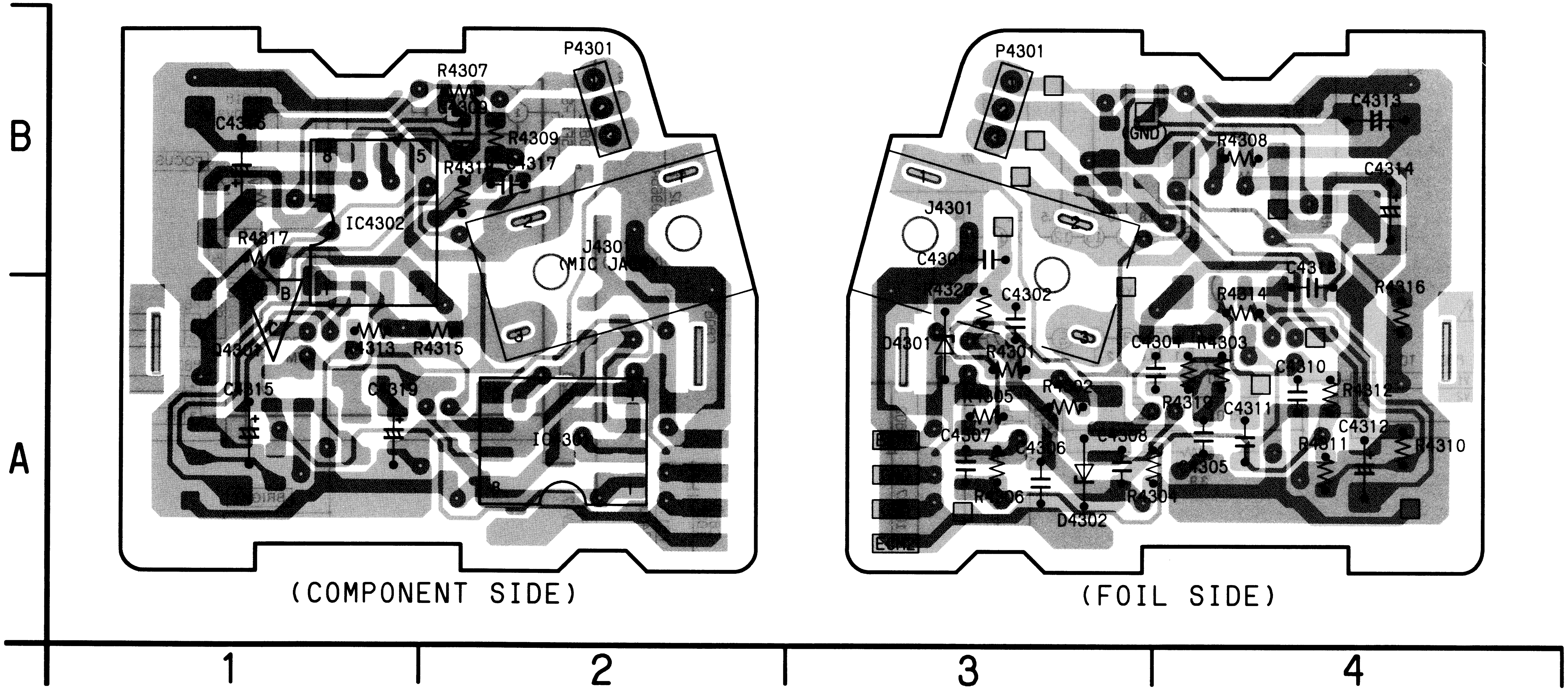

MAIN SIGNAL PATH IN REC MODE
C
B
A
1
2
3
4
5
ECM1
ECM2
D4301
MA8056
D4302
MA8056
R4320
2200
R4301
39K
C4301
1000P
C4302
0.012
R4302
47K
R4304
2200
C4306
0.018
R4305
22K
C4308
1000P
C4304
470P
R4319
15K
R4303
22K
C4305
0.015
C4307
390P
R4306
33K
IC4301
μPC4572G2
MIC2
MIC1
4.5
2.4
C4311
0.068
C4319
6V47
IC4302
μPC4572G2
C4309
47P
R4307
120K
C4314
10V2.2
R4308
8200
R4310
18K
C4310
22P
C4312
35V0.22
R4312
18K
R4311
18K
R4313
2700
R4314
2700
R4315
3300
C4318
0.033
C4313
16V1
R4317
39K
R4316
47K
C4315
6V47
Q4301
2SD2216
4.6
3.9
C4316
6V22
R4318
2200
C4317
0.01
R4309
2200
P4301 TO AUDIO
MIC +B
MIC GND
MIC OUT
3
2
1
P4001-3
P4001-2
P4001-1
J4301
VJJ0289
MIC JACK

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE.

Back Page:
DRIVE Section

3-27. MIC C.B.A. (VEP04347B)


B
A
1
2
3
4
P4301
R4307
C4309
R4309
R4311
C4317
C4316
IC4302
J4301
(MIC JACK)
R4317
D4303
R4313
R4315
C4315
C4319
IC4301
J4301
C4301
R4320
C4302
D4301
R4301
R4302
R4305
C4307
C4306
D4302
R4306
C4308
R4304
C4304
R4303
R4319
C4311
C4305
(GND)
R4308
C4313
C4314
C4318
R4314
R4316
C4310
R4312
C4312
R4311
R4310
ECM2

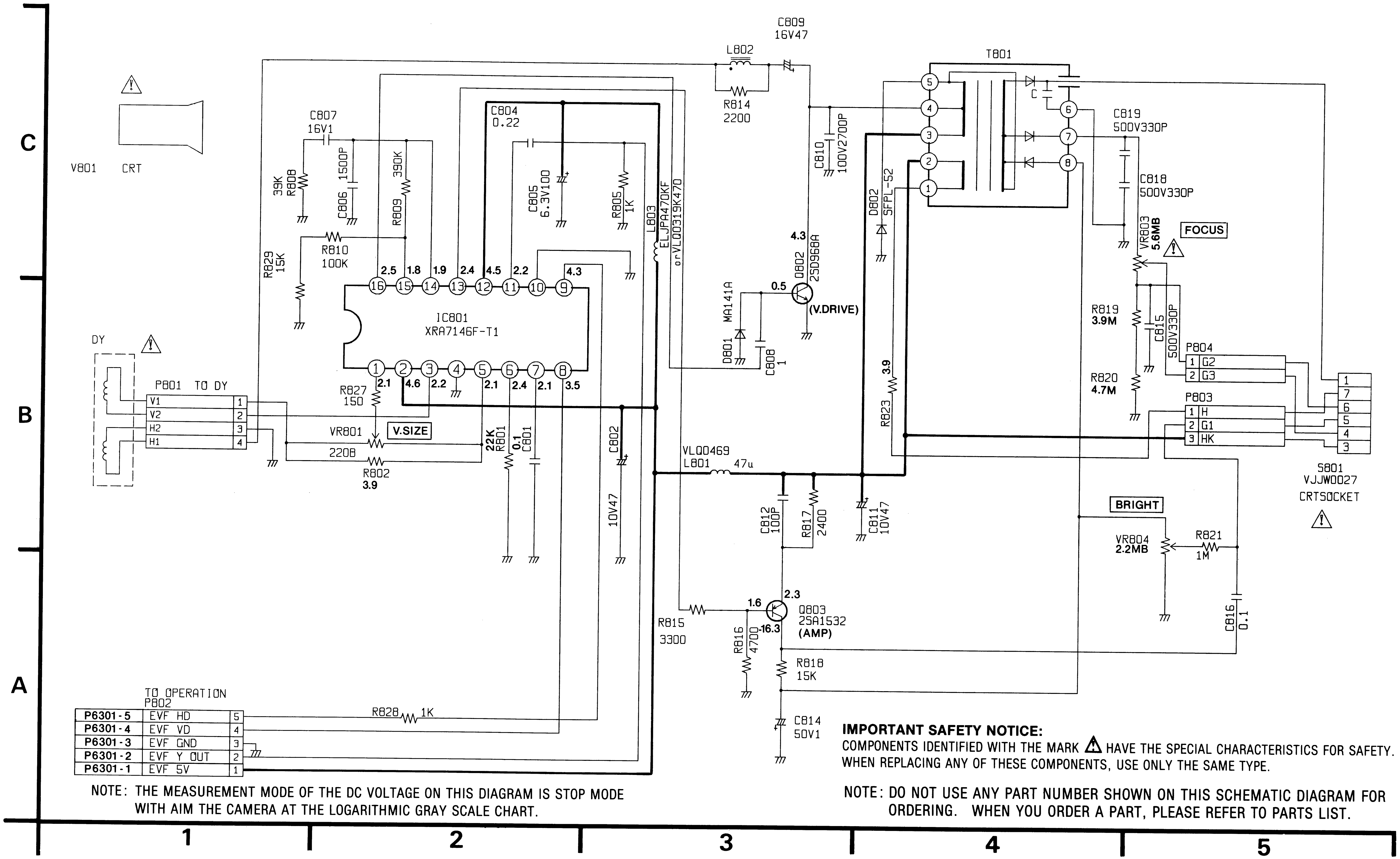
(COMPONENT SIDE)

(FOIL SIDE)

MIC C.B.A.	
Transistor	
Q4301	A-1 Ⓕ
Integrated Circuit	
IC4301 IC4302	A-2 Ⓕ B-1 Ⓒ
Connector	
P4301 P4301	B-2 Ⓒ B-3 Ⓕ

ADDRESS INFORMATION
Ⓒ ... COMPONENT SIDE
Ⓕ ... FOIL SIDE

3-28. EVF SCHEMATIC DIAGRAM


C
B
A
1
2
3
4
5
V801 CRT
DY
P801 TO DY
V1 1
V2 2
H2 3
H1 4
C807 16V1
R808 39K
C806 1500P
R809 390K
R810 100K
R829 15K
C804 0.22
C805 6.3V100
R805 1K
L803 ELJPA470KF or VLQ0319K470
IC801 XRA7146F-T1
2.5 1.8 1.9 2.4 4.5 2.2 4.3
16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
2.1 4.6 2.2 2.1 2.4 2.1 3.5
R827 150
VR801 V.SIZE
2208
R802 3.9
22K R801
0.1 C801
C802 10V47
L802
R814 2200
C809 16V47
C810 100V2700P
4.3
Q802 2SD968A
0.5
(V.DRIVE)
D801 MA141A
C808 1
D802 SFPL-52
VLQ0469 L801 47u
C812 100P
R817 2400
C811 10V47
R823 3.9
T801
5 4 3 2 1
6 7 8
C
C819 500V330P
C818 500V330P
VR803 5.6MB FOCUS
R819 3.9M
C815 500V330P
R820 4.7M
P804
1 G2
2 G3
P803
1 H
2 G1
3 HK
1 7 6 5 4 3
S801 VJJW0027 CRTSOCKET
BRIGHT
VR804 2.2MB
R821 1M
C816 0.1
R815 3300
1.6
2.3
Q803 2SA1532 (AMP)
-16.3
R816 4700
R818 15K
C814 50V1
TO OPERATION P802
R828 1K
P6301-5 EVF HD 5
P6301-4 EVF VD 4
P6301-3 EVF GND 3
P6301-2 EVF Y OUT 2
P6301-1 EVF 5V 1

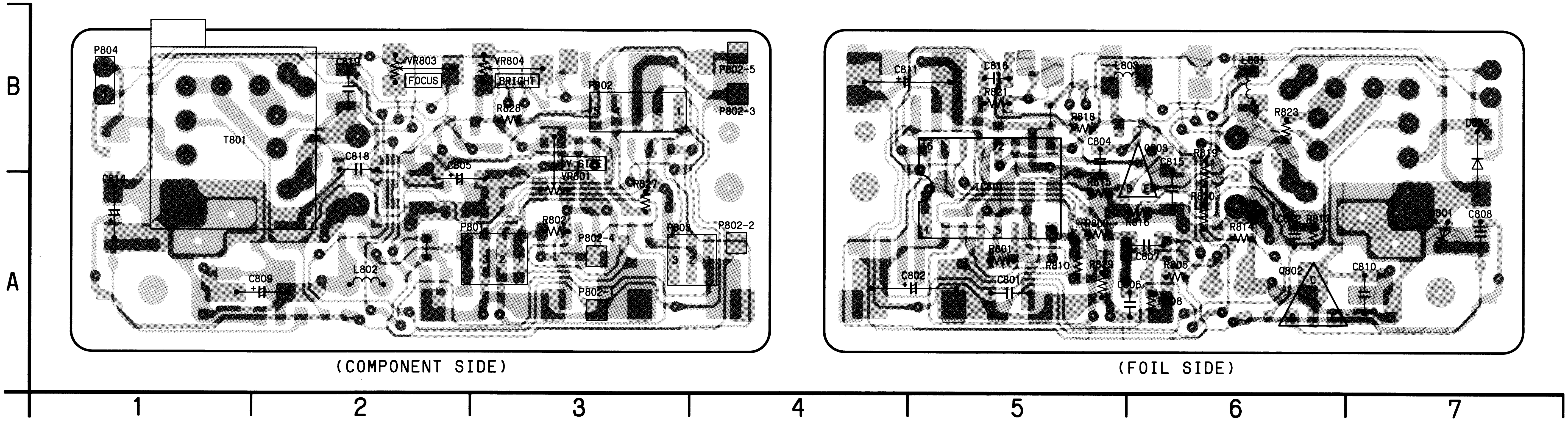
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

Back Page:
MIC Section

3-29. EVF C.B.A. (VEP28045A)


B
A
P804
T801
C819
VR803
FOCUS
VR804
BRIGHT
P802
R828
P802-5
P802-3
C818
C805
V.SIZE
VR801
R827
C814
R802
P801
P802-4
P803
P802-2
C809
L802
P802-1
C811
C816
R821
L803
L801
R818
C804
Q803
C815
R819
R823
D802
IC801
R815
R820
C812
R817
Q801
C808
R809
R816
R814
R801
C807
R810
R829
R805
C802
C801
C806
R808
Q802
C810
1
2
3
4
5
6
7

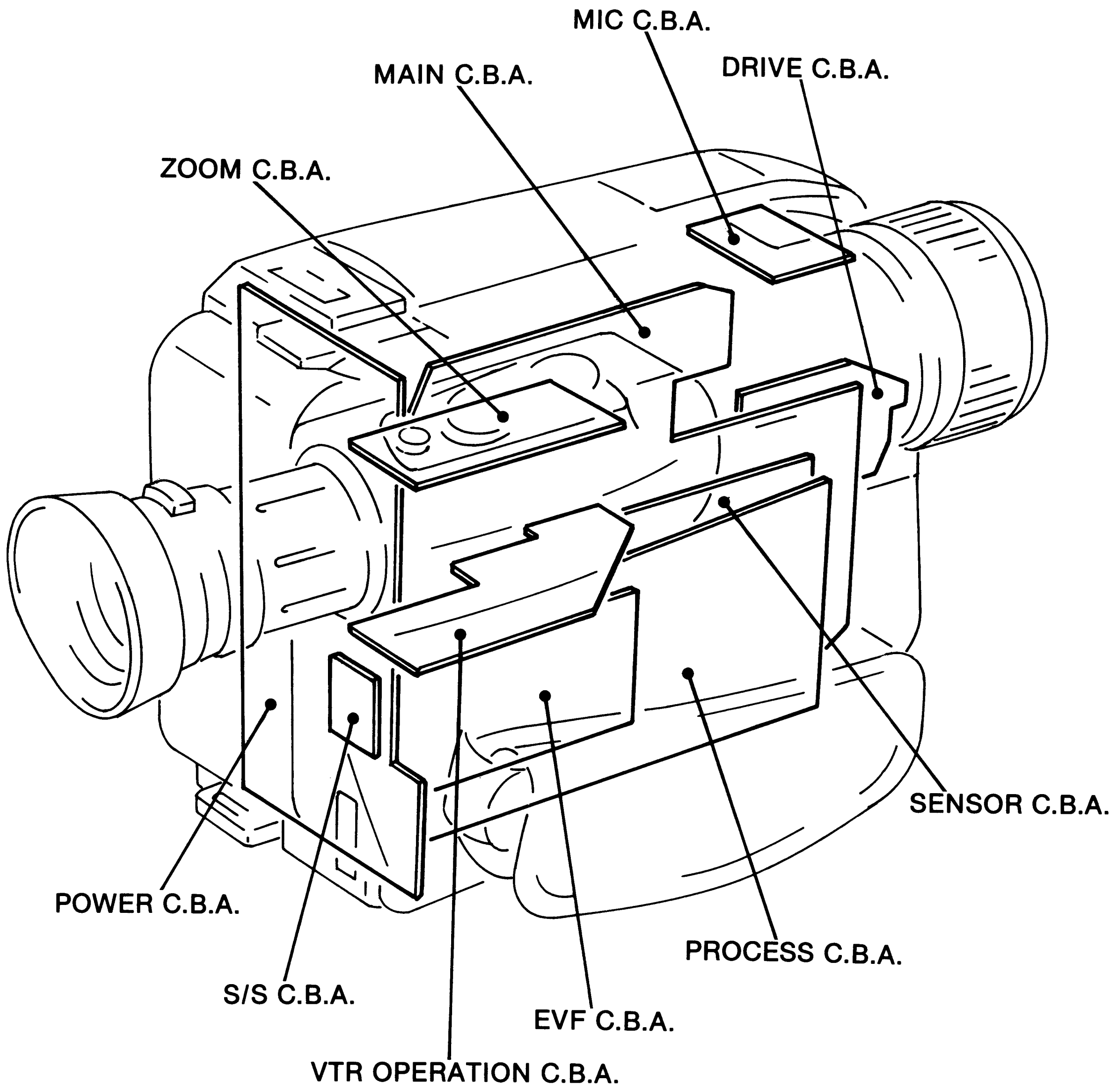
(COMPONENT SIDE)

(FOIL SIDE)

EVF C.B.A.	
Transistor	
Q802 Q803	B-6 Ⓕ B-6 Ⓕ
Integrated Circuit	
IC801	A-5 Ⓕ
Adjustment	
VR801 VR803 VR804	A-3 © B-2 © B-3 ©
Connector	
P801 P802 P803 P804	A-3 © B-3 © A-4 © B-1 ©

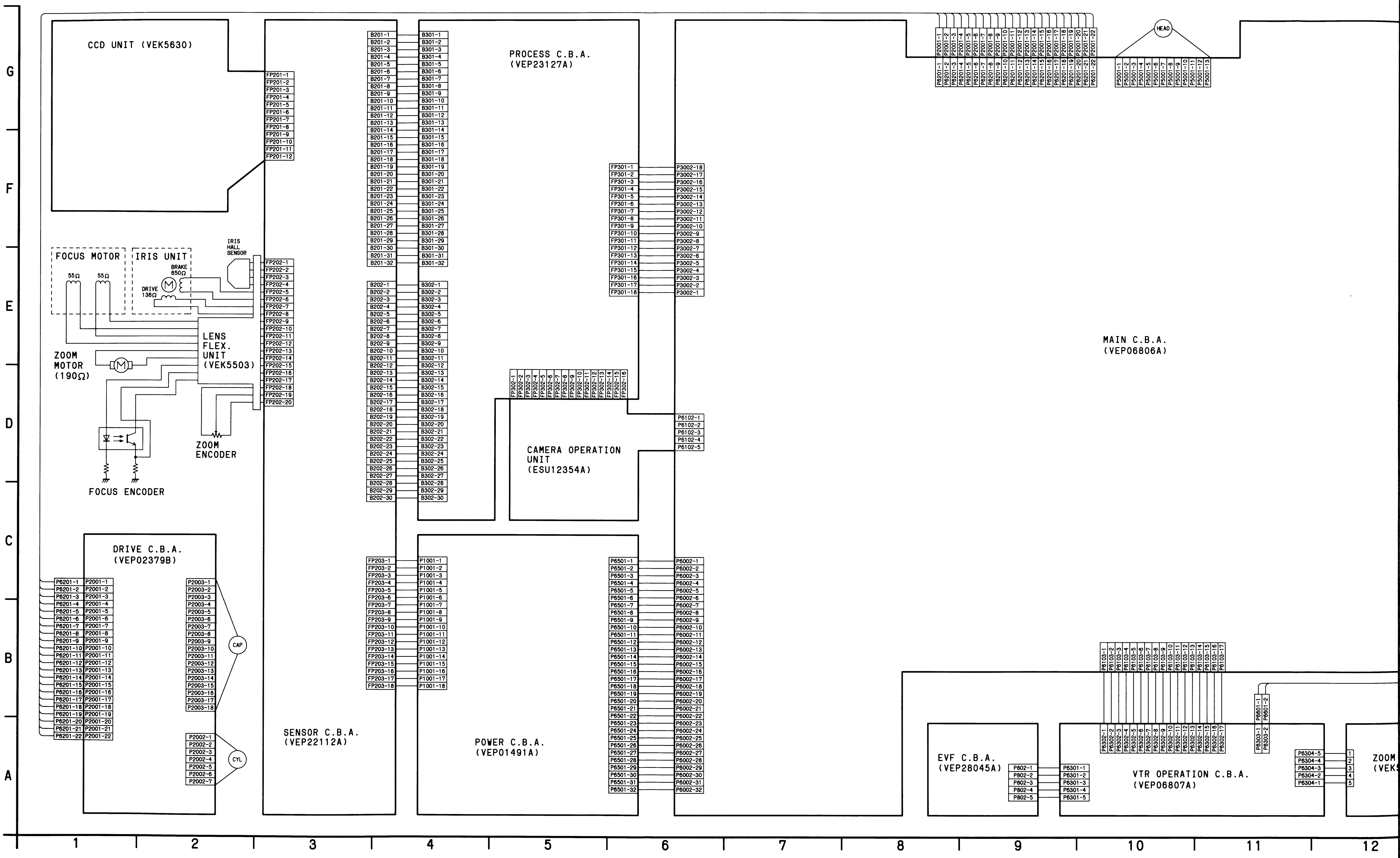
ADDRESS INFORMATION
©... COMPONENT SIDE
Ⓕ... FOIL SIDE

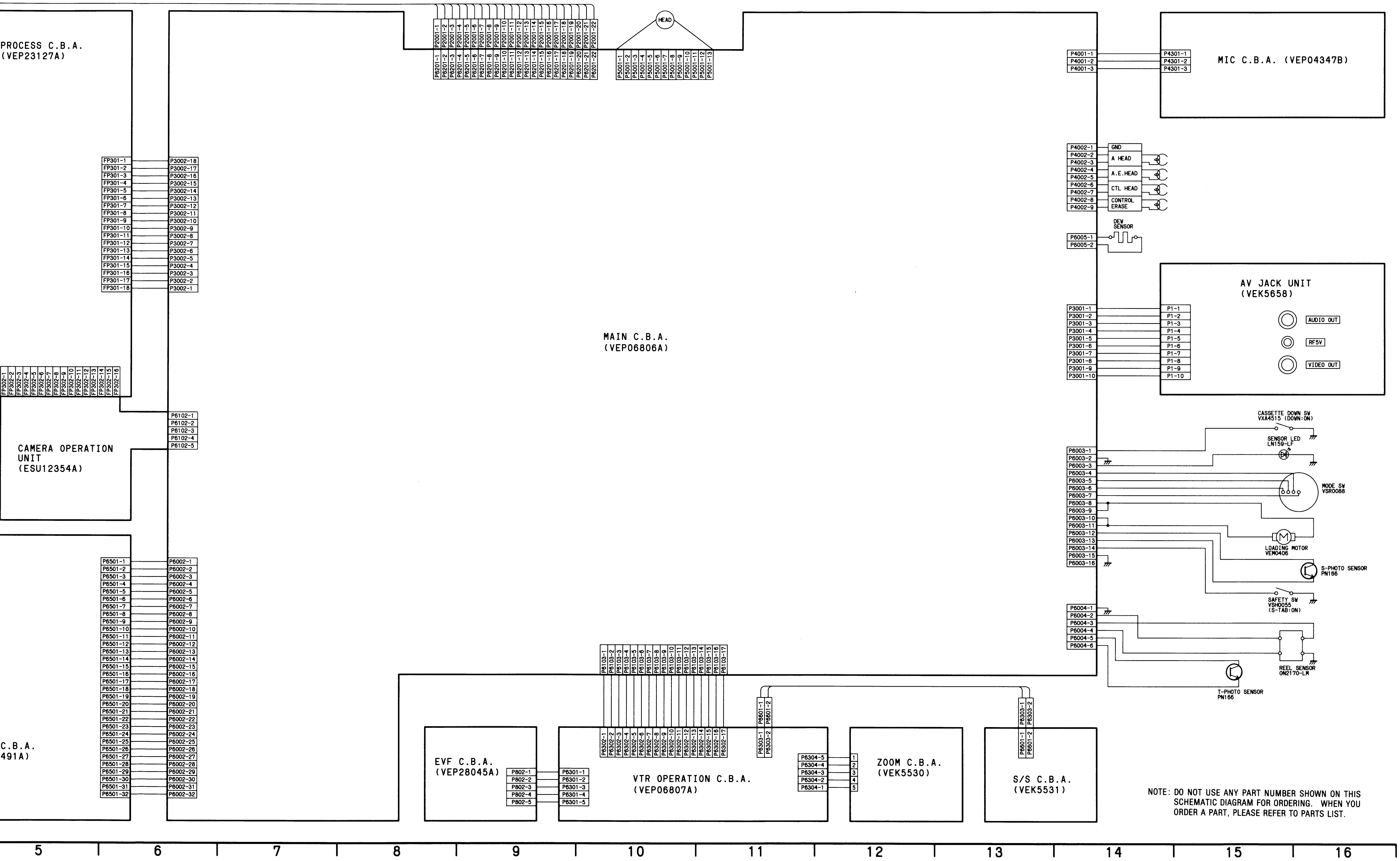
3-30. CIRCUIT BOARD LAYOUT


MIC C.B.A.
MAIN C.B.A.
DRIVE C.B.A.
ZOOM C.B.A.
SENSOR C.B.A.
POWER C.B.A.
PROCESS C.B.A.
S/S C.B.A.
EVF C.B.A.
VTR OPERATION C.B.A.

Back Page:
EVF Section

3-31. INTERCONNECTION SCHEMATIC DIAGRAM


CCD UNIT (VEK5630)
PROCESS C.B.A. (VEP23127A)
MAIN C.B.A. (VEP06806A)
FOCUS MOTOR
IRIS UNIT
IRIS HALL SENSOR
BRAKE 650Ω
DRIVE 136Ω
55Ω
55Ω
LENS FLEX. UNIT (VEK5503)
ZOOM MOTOR (190Ω)
ZOOM ENCODER
FOCUS ENCODER
CAMERA OPERATION UNIT (ESU12354A)
DRIVE C.B.A. (VEP02379B)
CAP
CYL
SENSOR C.B.A. (VEP22112A)
POWER C.B.A. (VEP01491A)
EVF C.B.A. (VEP28045A)
VTR OPERATION C.B.A. (VEP06807A)
HEAD
ZOOM
(VEK
FP201-1 … FP201-12
FP202-1 … FP202-20
FP203-1 … FP203-18
B201-1 … B201-32
B301-1 … B301-32
B202-1 … B202-30
B302-1 … B302-30
FP301-1 … FP301-18
P3002-18 … P3002-1
FP302-1 … FP302-16
P6102-1 … P6102-5
P1001-1 … P1001-18
P6501-1 … P6501-32
P6002-1 … P6002-32
P6201-1 … P6201-22
P2001-1 … P2001-22
P2003-1 … P2003-18
P2002-1 … P2002-7
P5001-1 … P5001-13
P6103-1 … P6103-17
P6302-1 … P6302-17
P6601-1
P6601-2
P6303-1
P6303-2
P802-1 … P802-5
P6301-1 … P6301-5
P6304-5 … P6304-1
1
2
3
4
5
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12

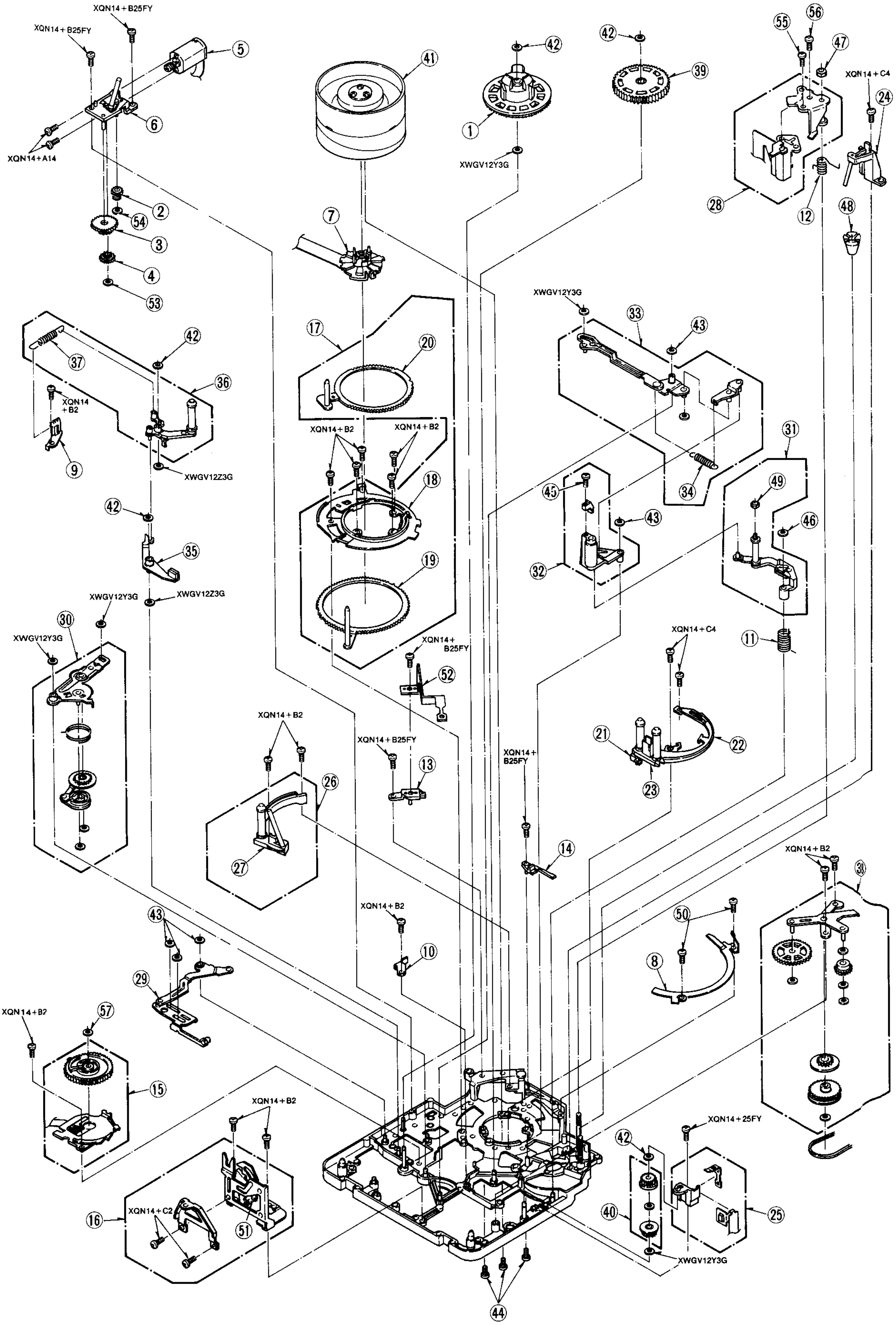

PROCESS C.B.A.
(VEP23127A)
CAMERA OPERATION
UNIT
(ESU12354A)
C.B.A.
491A)
MAIN C.B.A.
(VEP06806A)
HEAD
MIC C.B.A. (VEP04347B)
AV JACK UNIT
(VEK5658)
AUDIO OUT
RF5V
VIDEO OUT
GND
A HEAD
A.E.HEAD
CTL HEAD
CONTROL
ERASE
DEW
SENSOR
CASSETTE DOWN SW
VXA4515 (DOWN:ON)
SENSOR LED
LN159-LF
MODE SW
VSR0088
LOADING MOTOR
VEM0406
S-PHOTO SENSOR
PN166
SAFETY SW
VSH0055
(S-TAB:ON)
REEL SENSOR
ON2170-LM
T-PHOTO SENSOR
PN166
EVF C.B.A.
(VEP28045A)
VTR OPERATION C.B.A.
(VEP06807A)
ZOOM C.B.A.
(VEK5530)
S/S C.B.A.
(VEK5531)
FP301-1 … FP301-18
P3002-18 … P3002-1
FP302-1 … FP302-16
P6102-1 … P6102-5
P6501-1 … P6501-32
P6002-1 … P6002-32
P2001-1 … P2001-22
P6201-1 … P6201-22
P5001-1 … P5001-13
P4001-1 P4001-2 P4001-3
P4301-1 P4301-2 P4301-3
P4002-1 … P4002-9
P6005-1 P6005-2
P3001-1 … P3001-10
P1-1 … P1-10
P6003-1 … P6003-16
P6004-1 … P6004-6
P6103-1 … P6103-17
P6302-1 … P6302-17
P6601-1 P6601-2
P6303-1 P6303-2
P802-1 … P802-5
P6301-1 … P6301-5
P6304-5 P6304-4 P6304-3 P6304-2 P6304-1
1 2 3 4 5
5 6 7 8 9 10 11 12 13 14 15 16

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

SECTION 4
EXPLODED VIEWS & PARTS LIST

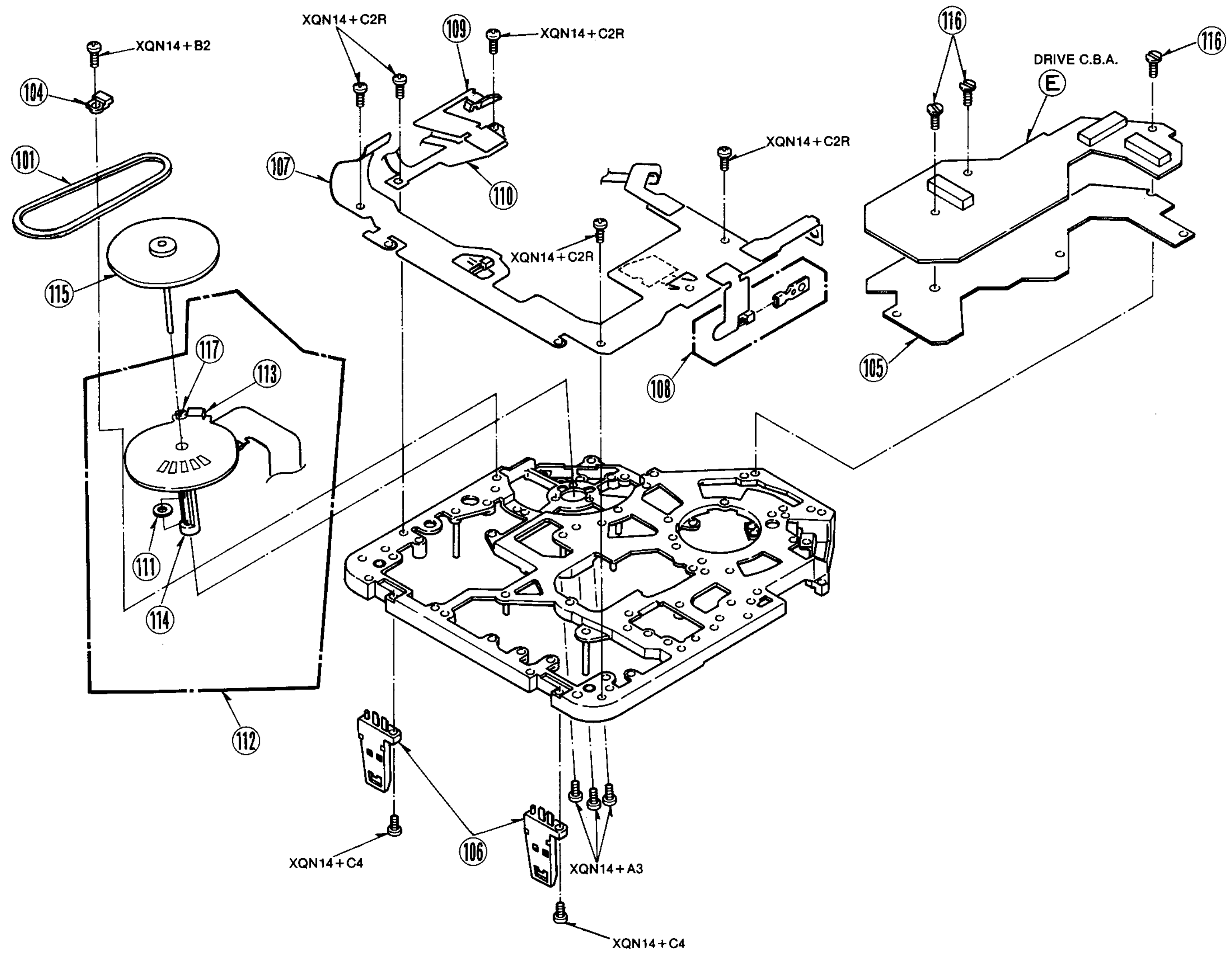
4-1. EXPLODED VIEWS

❶ VTR MECHANISM SECTION (1)

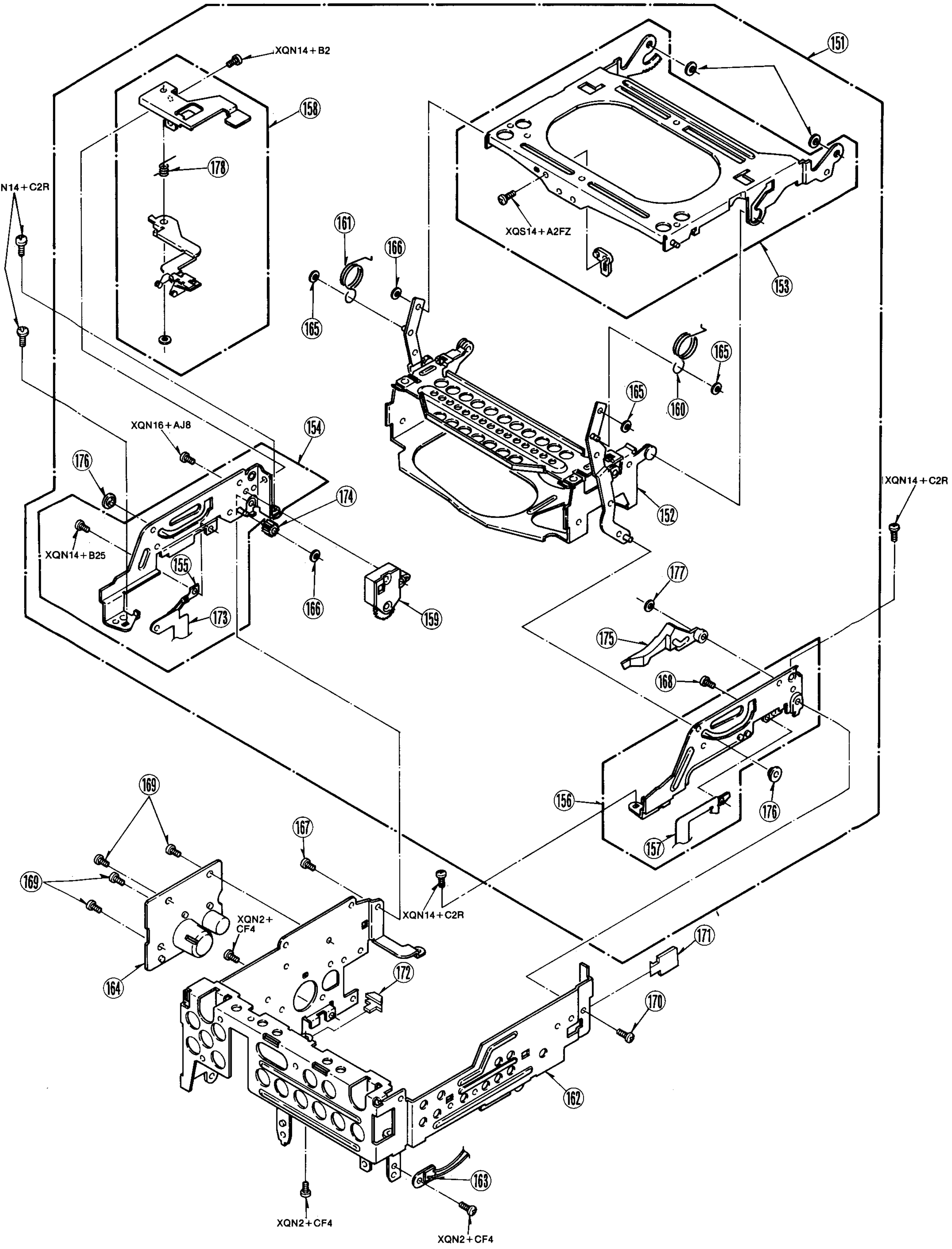


XQN14+B25FY
XQN14+B25FY
5
XQN14+A14
6
41
42
1
XWGV12Y3G
42
39
55
56
47
XQN14+C4
24
28
12
48
2
54
3
4
53
7
XWGV12Y3G
33
43
17
20
37
42
36
XQN14
+B2
9
XWGV12Z3G
XQN14+B2
XQN14+B2
18
45
34
31
49
42
35
43
46
32
19
XWGV12Y3G
XWGV12Z3G
30
XWGV12Y3G
11
XQN14+C4
XQN14+
B25FY
52
XQN14+B2
21
22
XQN14+B25FY
13
XQN14+
B25FY
26
23
27
14
XQN14+B2
38
50
XQN14+B2
43
10
8
29
XQN14+B2
57
15
XQN14+B2
XQN14+25FY
42
16
XQN14+C2
51
40
25
XWGV12Y3G
44

❷ VTR MECHANISM SECTION (2)

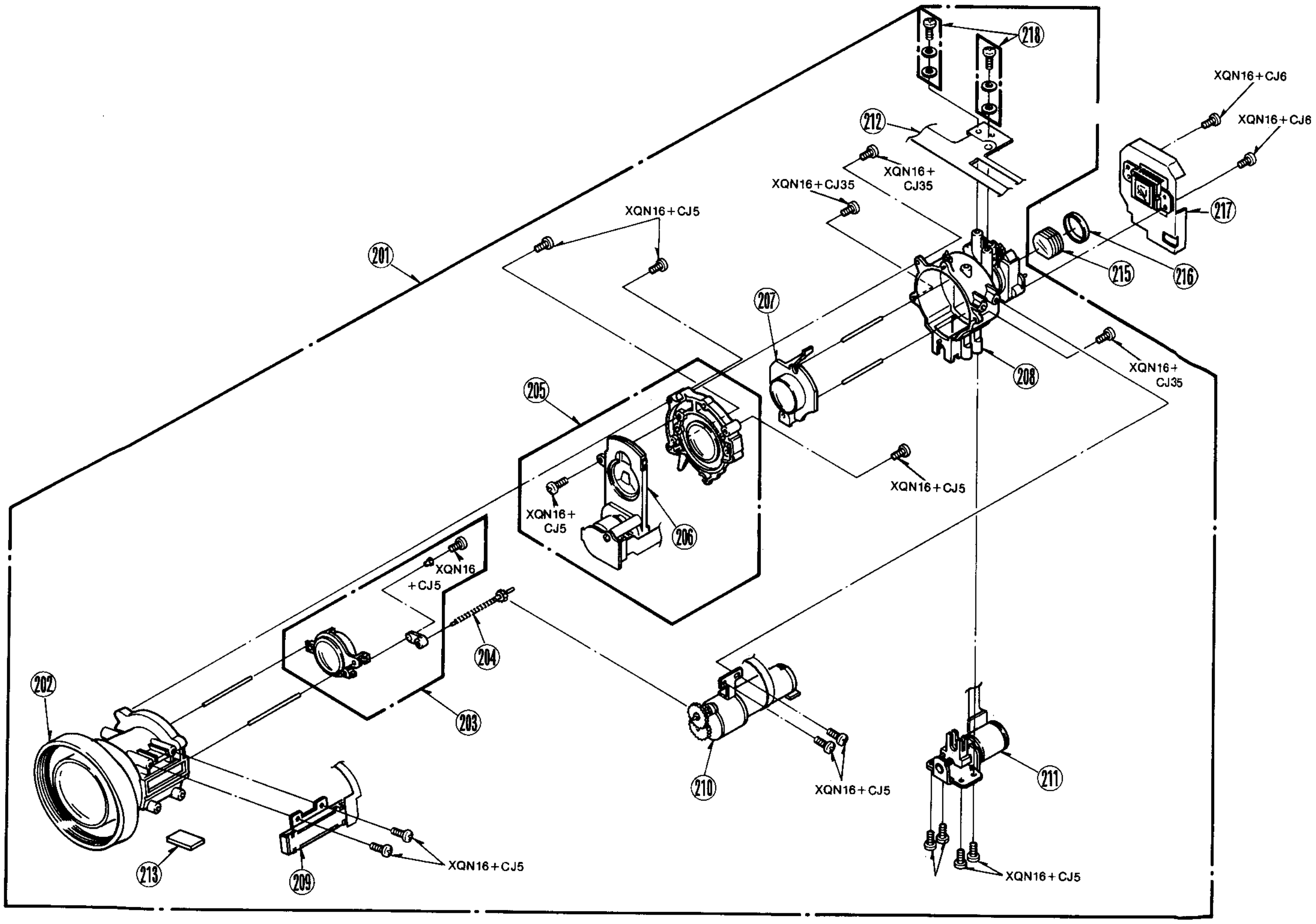

XQN14+B2
104
101
115
XQN14+C2R
109
XQN14+C2R
107
110
XQN14+C2R
XQN14+C2R
117
113
112
111
114
108
116
116
DRIVE C.B.A.
E
105
106
XQN14+C4
XQN14+A3
XQN14+C4

❸ VTR MECHANISM SECTION (3)



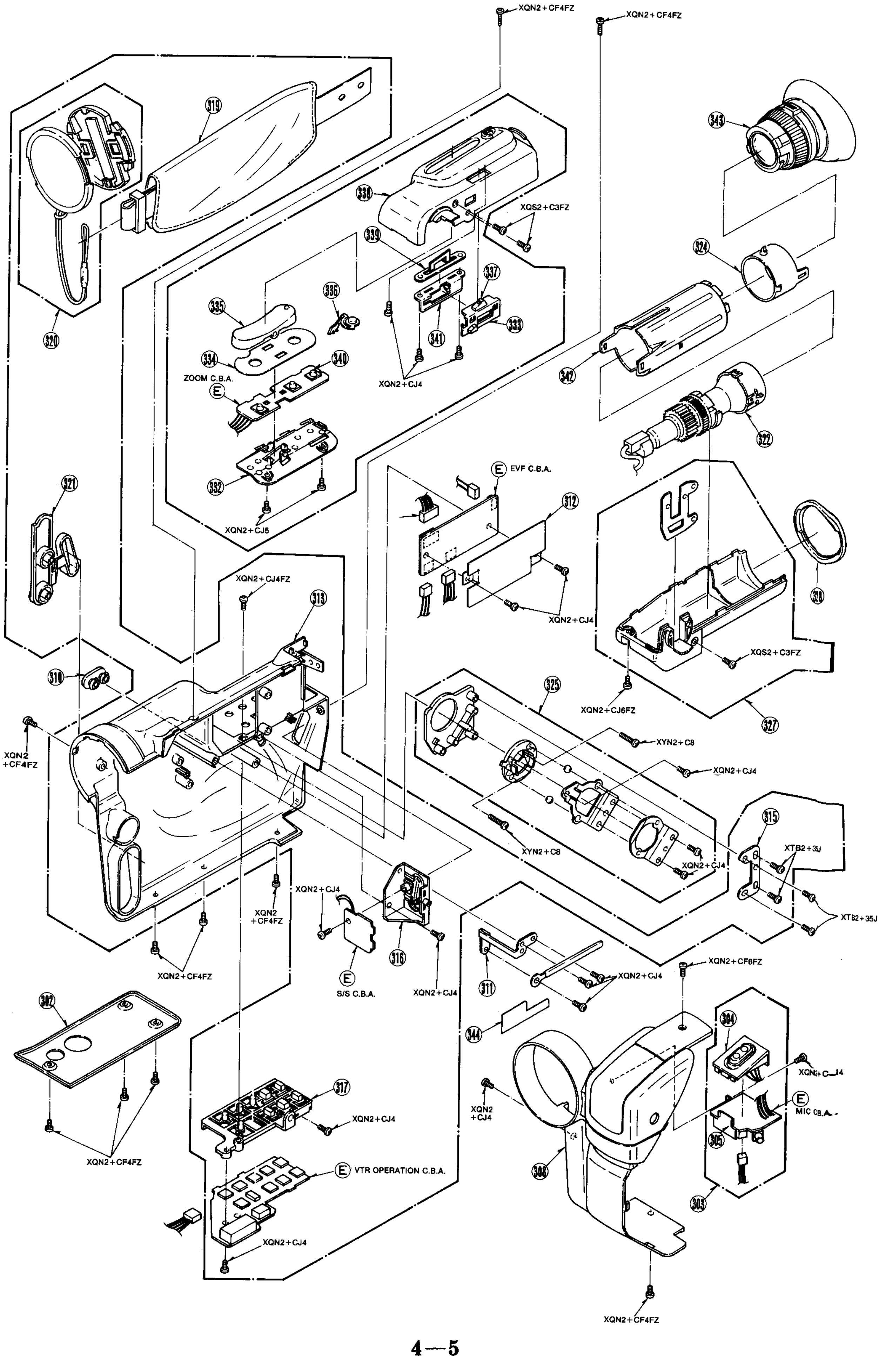
XQN14+B2
151
158
178
XQN14+C2R
153
XQS14+A2FZ
161
166
165
165
165
160
152
154
XQN16+AJ8
176
174
XQN14+C2R
XQN14+B25
155
173
166
159
177
175
168
156
176
157
169
169
167
XQN14+C2R
XQN2+CF4
164
171
172
170
162
163
XQN2+CF4
XQN2+CF4

④ CAMERA LENS SECTION

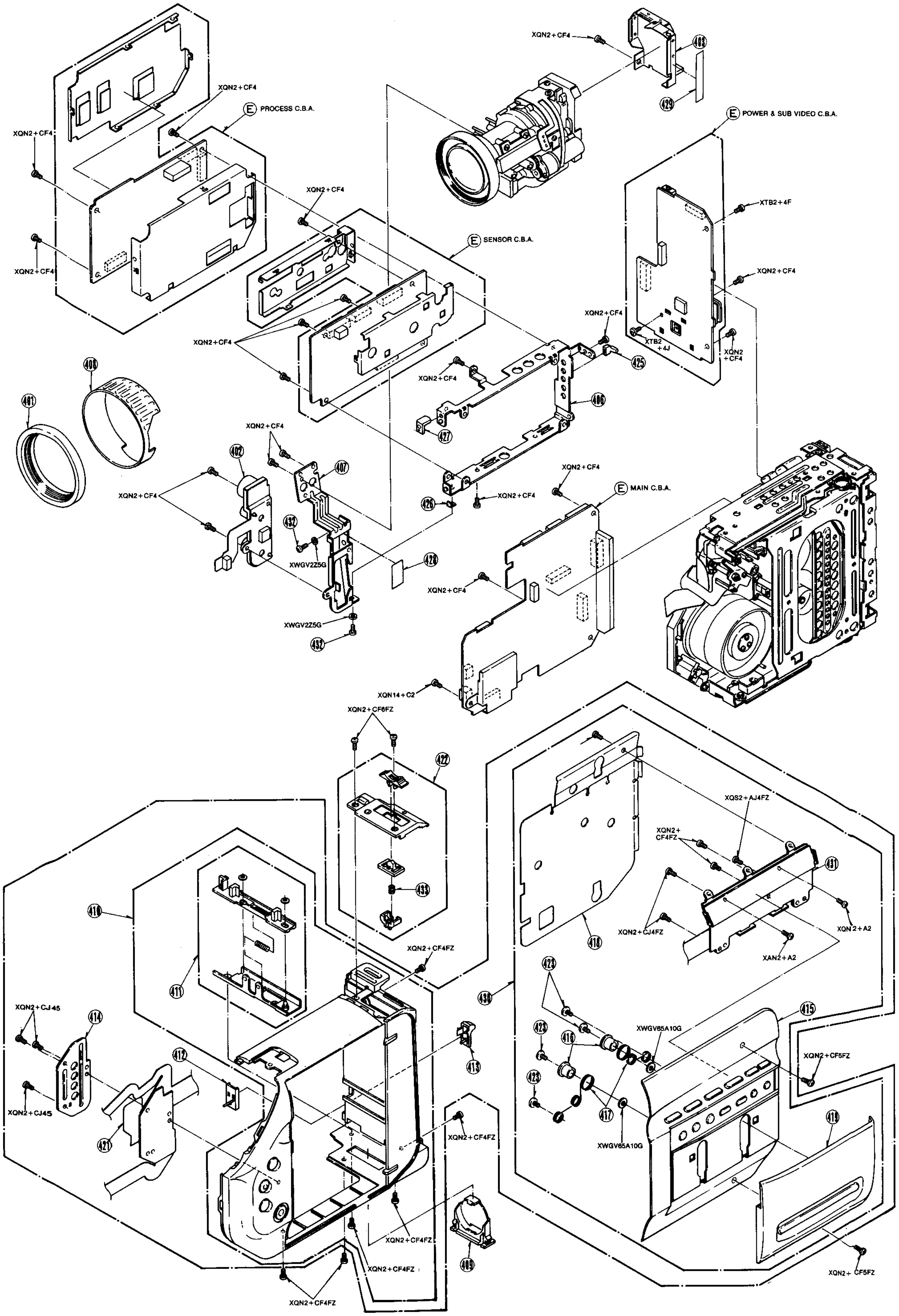


(218)
(212)
XQN16+CJ6
XQN16+CJ6
XQN16+
CJ35
XQN16+CJ35
(217)
XQN16+CJ5
(201)
(215)
(216)
(207)
XQN16+
CJ35
(208)
(205)
XQN16+CJ5
XQN16+
CJ5
(206)
XQN16
+CJ5
(204)
(202)
(203)
(210)
XQN16+CJ5
(211)
(213)
(209)
XQN16+CJ5
XQN16+CJ5

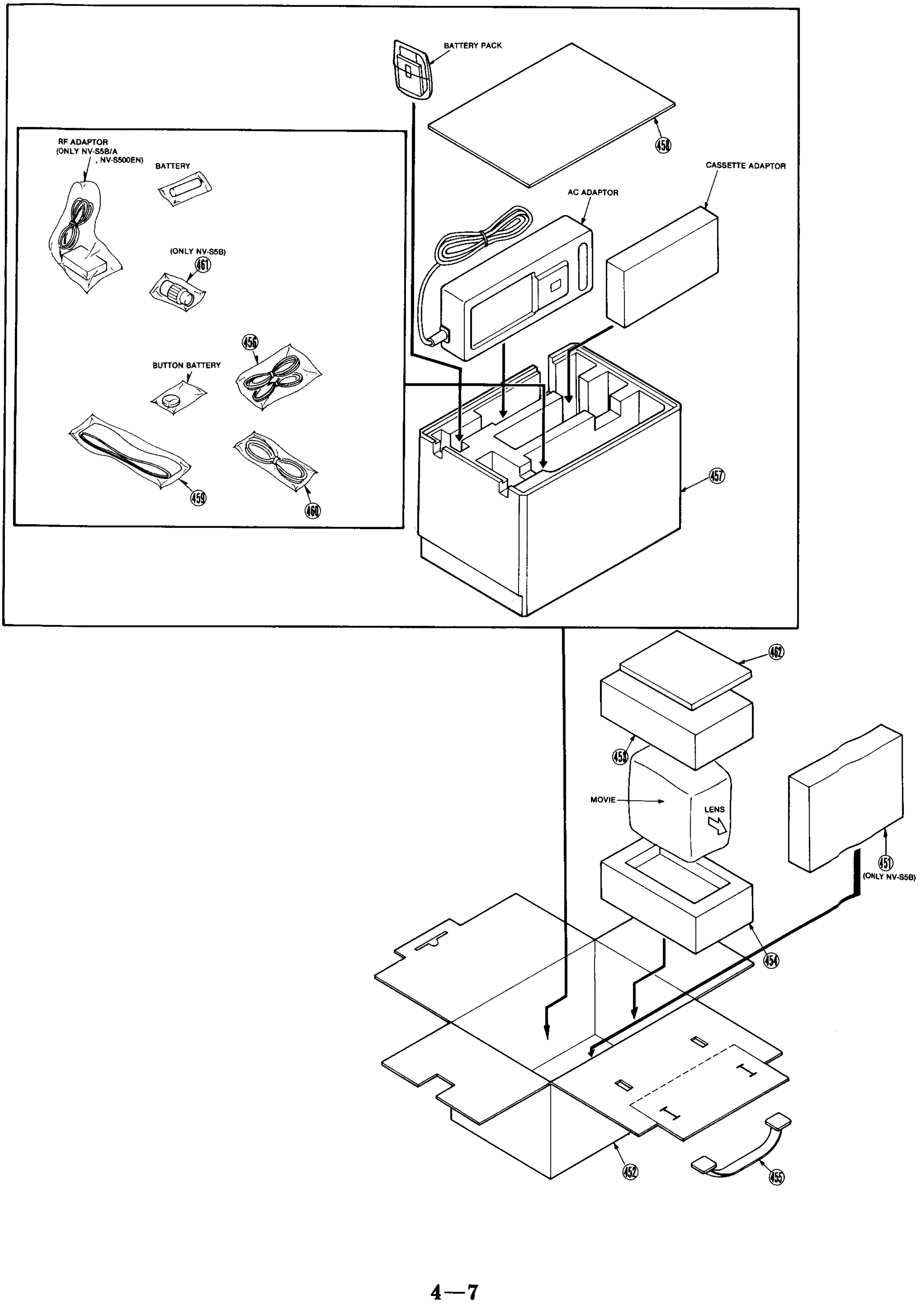
❺ FRAME & CASING PARTS SECTION (1)


XQN2+CF4FZ
XQN2+CF4FZ
319
343
338
XQS2+C3FZ
339
337
324
335
336
333
341
320
334
340
ZOOM C.B.A.
E
XQN2+CJ4
342
322
332
E
EVF C.B.A.
XQN2+CJ5
321
312
318
XQN2+CJ4FZ
313
XQN2+CJ4
XQS2+C3FZ
310
325
XQN2+CJ6FZ
327
XQN2
+CF4FZ
XYN2+C8
XQN2+CJ4
315
XTB2+3J
XYN2+C8
XQN2+CJ4
XQN2+CJ4
XQN2
+CF4FZ
XTB2+35J
316
XQN2+CF4FZ
E
S/S C.B.A.
XQN2+CJ4
311
XQN2+CJ4
XQN2+CF6FZ
302
344
304
XQN2+CJ4
XQN2
+CJ4
E
MIC C.B.A.
317
XQN2+CJ4
305
308
XQN2+CF4FZ
E
VTR OPERATION C.B.A.
303
XQN2+CJ4
XQN2+CF4FZ

❻ FRAME & CASING PARTS SECTION (2)


XQN2+CF4
Ⓔ PROCESS C.B.A.
XQN2+CF4
XQN2+CF4
XQN2+CF4
XQN2+CF4
Ⓔ SENSOR C.B.A.
XQN2+CF4
408
401
XQN2+CF4
402
407
XQN2+CF4
432
XWGV2Z5G
XWGV2Z5G
432
428
426
XQN2+CF4
427
406
XQN2+CF4
425
XQN2+CF4
403
429
Ⓔ POWER & SUB VIDEO C.B.A.
XTB2+4F
XQN2+CF4
XTB2 +4J
XQN2 +CF4
XQN2+CF4
XQN2+CF4
Ⓔ MAIN C.B.A.
XQN2+CF4
XQN14+C2
XQN2+CF6FZ
422
433
410
411
XQN2+CF4FZ
XQN2+CJ45
414
XQN2+CJ45
412
421
413
XQN2+CF4FZ
XQN2+CF4FZ
XQN2+CF4FZ
XQN2+CF4FZ
409
430
XQS2+AJ4FZ
XQN2+ CF4FZ
431
XQN2+CJ4FZ
XQN2+A2
XAN2+A2
418
423
423
423
416
XWGV65A10G
417
XWGV65A10G
415
XQN2+CF5FZ
419
XQN2+ CF5FZ

❼ PACKING PARTS & ACCESSORIES SECTION


BATTERY PACK
458
CASSETTE ADAPTOR
AC ADAPTOR
RF ADAPTOR (ONLY NV-S5B/A , NV-S500EN)
BATTERY
(ONLY NV-S5B)
461
456
BUTTON BATTERY
459
460
457
462
453
MOVIE
LENS
451
(ONLY NV-S5B)
454
452
455

4-2. MECHANICAL REPLACEMENT PARTS LIST

Note:1.* Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
**********		NV-S5E/B/EC/			
		A/EN.			
1(1)		VDR0226	REEL BASE (S)	1	
2(1)		VDG0821	BRAKE GEAR (A)	1	
3(1)		VDG0822	BRAKE GEAR (B)	1	
4(1)		VDG0823	BRAKE GEAR (C)	1	
5(1)		VEM0417	LOADING MOTOR (1) U.	1	
6(1)		VXA4527	MOTOR HOLDER U.	1	
7(1)		VEP03867A	RT CONNECTOR U.	1	
8(1)		VMA8502	T-RING SLIDER	1	
9(1)		VMA8505	TEN-REG.SPRING HOOK	1	
10(1)		VMA8532	PENDULUM ARM HOLDER	1	
11(1)		VMB2362	T3 ARM SPRING	1	
12(1)		VMB2365	AC HEAD SPRING	1	
13(1)		VMD1848	S-BOAT GUIDE	1	
14(1)		VMD1851	T-BOAT GUIDE	1	
15(1)		VSR0088	MODE SWITCH U.	1	
16(1)		VXA4515	LOCK BASE U.	1	
17(1)		VXA4517	LOADING RING U.	1	
18(1)		VMD1824	RING GUIDE	1	
19(1)		VXA4518	T-RING U.	1	
20(1)		VXA4519	S-RING U.	1	
21(1)		VEK5549	LED U.	1	
22(1)		VMD1828	T-RAIL	1	
23(1)		VXA4523	T-BOAT U.	1	
24(1)		VXA4528	T4 POST U.	1	
25(1)		VXA4530	T-REEL SENSOR U.	1	
26(1)		VXA4532	S-RAIL U.	1	
27(1)		VXA4525	S-BOAT U.	1	
28(1)		VXA4553	AC HEAD U.	1	
29(1)		VXL2130	EJECT LEVER U.	1	
30(1)		VXL2133	SWING ARM U.	1	
31(1)		VXL2135	T3 ARM U.	1	
32(1)		VXL2138	PINCH ARM U.	1	
33(1)		VXL2140	PINCH DRIVE ARM U.	1	
34(1)		VMB2363	PINCH PRESSURE SPRING	1	
35(1)		VXL2144	PAD ARM U.	1	
36(1)		VXL2145	TEN-REG. ARM U.	1	
37(1)		VMB2364	TEN-REG. SPRING	1	
38(1)		VXL2147	IDLER U.	1	
39(1)		VXP1308	RELAY GEAR U.	1	
40(1)		VXP1313	T-DRIVE GEAR U.	1	
41(1)		VEG0927	CYLINDER U.	1	
42(1)		VMX2027	WASHER	5	
43(1)		VMX2026	WASHER	5	
44(1)		VHD0682	SCREW	3	
45(1)		VHD0715	SCREW	1	
46(1)		VMX2135	WASHER	1	
47(1)		VHN0047	NUT	1	
48(1)		VHN0175	ADJUST NUT	1	
49(1)		VHN0172	T3 POST NUT	1	
50(1)		VHD0711	SCREW	3	
51(1)		VMB2369	LOCK SPRING	1	
52(1)		VXS0105	EARTH BRUSH U.	1	
53(1)		VMX2027	WASHER		
54(1)		VMX2051	WASHER		
55(1)		VHD0536	SCREW		
56(1)		VHD0526	SCREW		
57(1)		VMX2026	WASHER		
101(2)		VDV0232	CAPSTAN BELT	1	
104(2)		VMD1846	CAPSTAN STOPPER	1	
105(2)		VMZ1871	BARRIER	1	
106(2)		VSH0055	REC SAFETY SW U.	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
107(2)		VWJ0580	MECH.FLEXIBLE CARD	1	
108(2)		VXA4511	PHOTO (L) U.	1	
109(2)		VXA4514	PHOTO (R) U.	1	
110(2)		VXA4530	T-REEL SENSOR U.	1	
111(2)		VDB1129	LOWER BEARING	1	
112(2)		VEK5516	STATOR U.	1	
113(2)		VBK0059	MR HEAD	1	
114(2)		VXD0134	HOUSING U.	1	
115(2)		VXP1303	ROTOR U.	1	
116(2)		VHD0681	SCREW	3	
117(2)		VHD0593	SCREW	1	
151(3)		VXA4706	GARAGE U.	1	
152(3)		VXA4506	HOLDER U.	1	
153(3)		VXA4508	GARAGE (1) U.	1	
154(3)		VXA4510	STAND (L) U.	1	
155(3)		VXA4511	PHOTO (L) U.	1	
156(3)		VXA4513	STAND (R) U.	1	
157(3)		VXA4514	PHOTO (R) U.	1	
158(3)		VXL2212	TAPE GUIDE U.	1	
159(3)		VXP1315	DUMPER	1	
160(3)		VMB2367	UP SPRING (R)	1	
161(3)		VMB2368	UP SPRING (L)	1	
162(3)		VMP3159	MAIN FRAME	1	
163(3)		VEK5550	DEW SENSOR	1	
164(3)		VMD1800	TRIPOD FRAME	1	
165(3)		VMX1042	WASHER	3	
166(3)		VMX1061	WASHER	2	
167(3)		VHD0714	SCREW	1	
168(3)		VHD0706	SCREW	1	
169(3)		VHD0710	SCREW	4	
170(3)		VHD0713	SCREW	1	
171(3)		VGQ2736	INSULATION PIECE (A)	1	
172(3)		VGQ2737	INSULATION PIECE (B)	1	
173(3)		VWJ0548	PHOTO FLEX.CARD	1	
174(3)		VDG0827	DUMPER RELAY GEAR	1	
175(3)		VML2580	TAPE OPEN LEVER	1	
176(3)		VDP1406	ARM HOLDER	2	
177(3)		VMX1776	WASHER	1	
178(3)		VMB2375	TAPE GUIDE SPRING	1	
201(4)		VXW0103	LENS U.	1	
202(4)		VXQ0263	LENS MAIN U.	1	
203(4)		VXP1300	2ND MOVING FRAME U.	1	
204(4)		VXP1302	SCREW SHAFT U.	1	
205(4)		VXQ0264	3RD U.	1	
206(4)		VXL2126	IRIS U.	1	
207(4)		VXP1301	4TH MOVING FRAME U.	1	
208(4)		VMD1815	MASTER FLANGE U.	1	
209(4)		EVAJH4J03B14	ZOOM ENCODER	1	
210(4)		VEM0408	ZOOM MOTOR	1	
211(4)		VEM0413	FOCUS MOTOR	1	
212(4)		VEK5684	LENS FLEX. U.	1	
213(4)		VMT0336	CUSHION	1	
214(4)		VMT0342	ZOOM MOTOR CUSHION	1	
215(4)		VDL0264	CRYSTAL FILTER	1	
216(4)		VMX1846	CCD CUSHION	1	
217(4)		VEK5630	CCD U.	1	
218(4)		VHD0666	SCREW	2	
302(5)		VSC3409	HEAT SINK	1	
303(5)		VEK5782	MIC U.	1	
304(5)		VEK5466	ECM U.	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
305(5)		VSC3344	MIC SHIELD CASE	1	
308(5)		VYK4183	FRONT CASE (1) U.	1	
310(5)		VMG0556	RUBBER CAP	1	
311(5)		VMP3236	EVF MOUNT ANGLE (B)	1	
312(5)		VMZ1946	EVF C.B.A. BARRIER	1	
313(5)		VYK4194	SIDE CASE (L)(2) U.	1	
315(5)		VMP3235	EVF MOUNT ANGLE (A)	1	
316(5)		VGU5565	SIS BUTTON	1	
317(5)		VGU5566	VTR OPERATION BUTTON	1	
318(5)		VHD0666	SCREW	2	
319(5)		VYC0466	GRIP BELT	1	
320(5)		VYF1759	FOOD CAP U.	1	
321(5)		VKF1758	AV JACK COVER	1	
322(5)		M01KKX07WB03	CRT	1	
324(5)		VJF0941	CRT HOLDER	1	
325(5)		VYQ0607	ROTATION SECTION U.	1	
326(5)		VMZ1882	CRT BARRIER	1	
327(5)		VYK4098	EVF BOTTOM CASE U.	1	
328(5)		VGU5569	EVF RING	1	
332(5)		VGQ2494	ZOOM BUTTON HOLDER	1	
333(5)		VGQ2532	EVF LOCK PIECE	1	
334(5)		VGQ2664	ZOOM BUTTON BARRIER	1	
335(5)		VGU5567	ZOOM BUTTON	1	
336(5)		VGU5585	SNAP SHOT BUTTON	1	
337(5)		VGU5615	EVF LOCK BUTTON	1	
338(5)		VKM2847	EVF TOP CASE	1	
339(5)		VMC0805	EVF LOCK SPRING	1	
340(5)		VMG0358	RUBBER SWITCH	1	
341(5)		VMP3233	EVF LOCK PIECE HOLDER	1	
342(5)		VGQ2500	SLIDE PIECE	1	
343(5)		VYQ0573	EYE CAP U.	1	
344(5)		VMZ1910	EVF WIRE BARRIER	1	
401(6)		VDW0148	LENS FOOD	1	
402(6)		VEK5658	AV JACK U.	1	
403(6)		VSC3557	CCD SHIELD CASE (A)	1	
406(6)		VMP3161	CAMERA FRAME	1	
407(6)		VMP3259	JACK FRAME	1	
408(6)		VGK1981	LENS RING	1	
409(6)		VKF1707	BUTTERY COVER	1	
410(6)		VYK4182	SIDE CASE (R)(1) U.	1	
411(6)		VXU1074	BATTERY LOCK PIECE U.	1	
412(6)		VGQ2491	BATTERY SLIDE PIECE	1	
413(6)		VGU5561	BATTERY EJECT KNOB	1	
414(6)		VMP3155	DIS BUTTON HOLDER	1	
415(6)		VYP3781	CASSETTE COVER (1) U.	1	
416(6)		VGQ2487	CURSOR HOOR PIECE	2	
417(6)		VMC0736	CURSOR MOVING SPRING	2	
		ESU12354A			
418(6)		VMZ1879	CASSETTE COVER BARRIER	1	
419(6)		VYP3738	CURSOR U.	1	NV-S5E/B/EC/A
419(6)		VYP3796	CURSOR U.	1	NV-S500EN
421(6)		VMZ1912	CAMERA FLEX. BARRIER	1	
422(6)		VYP3739	POWER BOTTON PANEL U.	1	
423(6)		VHD0687	SCREW	4	
425(6)		VGQ2738	INSULATION PIECE (C)	1	
426(6)		VGQ2739	INSULATION PIECE (D)	1	
427(6)		VGQ2740	INSULATIO PIECE (E)	1	
428(6)		VMZ1929	AV JACK BARRIER	1	
429(6)		VMZ1914	CCD SHIELD CASE BARRIER	1	
430(6)		VYP3740	CASSETTE COVER U.	1	NV-S5E/B/EC/A
430(6)		VYP3797	CASSETTE COVER U.	1	NV-S500EN
431(6)		ESU12354A	CAMERA OPERATION U.	1	
432(6)		VHD0667	SCREW	2	
433(6)		VMB2227	BATTERY SPRING	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
451(7)		VFC1089	SOFT CASE	1	NV-S5B
452(7)		VPG6103	PACKING CASE	1	NV-S5E
452(7)		VPG6104	PACKING CASE	1	NV-S5B
452(7)		VPG6107	PACKING CASE	1	NV-S5EC
452(7)		VPG6105	PACKING CASE	1	NV-S5A
452(7)		VPG6106	PACKING CASE	1	NV-S500EN
453(7)		VPN3181	CUSHION (UPPER)	1	
454(7)		VPN3182	CUSHION (LOWER)	1	
455(7)		VPN2329	HANDLE	1	
456(7)		VFA0095	AV CORD	1	NV-S5E/EC
456(7)		VFA0039	AV CORD	1	NV-S5B/A/S500EN
457(7)		VPN3225	ACCESSORY BOX	1	
458(7)		VPN3226	PAD	1	
459(7)		VFC0974	SHOLDER STRAP	1	
460(7)		VJA0669	DC OUTPUT CABLE	1	
461(7)		VFA0097	PHONO/PNC PLUG	1	NV-S5B
462(7)		VQT4294	OPERATING INSTRUCTIONS	1	NV-S5E/EC
			(ENGLISH/GERMAN)		
462(7)		VQT4295	OPERATING INSTRUCTIONS	1	NV-S5E/EC
			(FRENCH/SPANISH)		
462(7)		VQT4296	OPERATING INSTRUCTIONS	1	NV-S5E/EC
			(ITALIAN/DUTCH)		
462(7)		VQT4297	OPERATING INSTRUCTIONS	1	NV-S5E/EC
			(FINNISH/DANISH)		
462(7)		VQT4298	OPERATING/INSTRUCTIONS	1	NV-S5E/EC
			(SWEDISH)		
462(7)		VQT4299	OPERATING INSTRUCTIONS	1	NV-S5B
			(ENGLISH)		
426(7)		VQT4300	OPERATING INSTRUCTIONS	1	NV-S5A
			(ENGLISH)		
426(7)		VQT4301	OPERATING INSTRUCTIONS	1	NV-S500EN
			(ENGLISH/CHINESE)		
426(7)		VQT4302	OPERATING INSTRUCTIONS	1	NV-S500EN
			(ARABIC/HINDY)		
			JIG & TOOLS		
		VFM8180HUPF	VHS-C ALIGMENT TAPE	1	PAL
		VFK0374	COLOUR TEMP.CONV.FILRTER	1	(C12) OR VFK0713
		VEK0375	COLOUR TEMP.CONV.FILRTER	1	(C2) OR VFK0716
		VFK0644	EVR FIXTURE	1	
		VFK0701ROM2	ROM	1	
		VFK0335	RETAINING RING REMOVER	1	
		VFK0329	POST ADJ. SCREW DRIVER	1	
		VFK0343	CHECK LIGHT	1	
		VFK0326	HEX WRENCH SET	1	
		VFK27	HEAD CLEANING STICK	1	
		MOR265	MORLTONE GEASE	1	
		VFK0686	EXTENSION CABLE 17P	1	
		VFK0723	EXTENSION CABLE 22P	1	
		VFK0724	EXTENSION CABLE 32P	1	
		VFK0725	EXTENSION CABLE (2) 18P	1	
		VFK0726	EXTENSION CABLE(WHITE)18P	1	
		VFK0727	EXTENSION CABLE 16P	1	
		VFK0729	EXTENSION CABLE 6P	1	
		VFK0728	EXTENSION CABLE 9P	1	
		VFK0667	EXTENSION CABLE 30P	1	
		VFK0724	EXTENSION CABLE 32P	1	
		VFK0730	EVF CONNECTION CABLE	1	
		VFK0733	MEASUREMENT CABLE	1	

4-3. ELECTRICAL REPLACEMENT PARTS LIST

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.
3.Unless otherwise specified,
All resistors are in OHMS ,K=1,000 OHMS. All capacitors are in MICROFARADS(uf),P=uuF.
4.The P.C.Board units marked width'■'show below the main assembled parts.
5.Printed circuit board assembly with mark(NLA) is no longer available after discontinuation of the product.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEP22112A	SENSOR C.B.A.	1	(NLA)
		VEP23127A	PROCESS C.B.A.	1	(NLA)
		VEP04347B	MIC C.B.A.	1	(NLA)
		VEP28045A	EVF C.B.A.	1	(NLA)
		VEP06807A	VTR OPERATION C.B.A.	1	(NLA)
		VEP01491A	POWER C.B.A.	1	(NLA)
		VEP06806A	MAIN C.B.A.	1	(NLA)
		VEP02379B	DRIVE C.B.A.	1	(NLA)
		VEK5531	S/S SWITCH C.B.A.	1	(NLA)
		VEK5530	ZOOM C.B.A.	1	(NLA)
	■	VEP22112A	SENSOR C.B.A.		(NLA)
			CONNECTORS		
B201		VJP3159C032	CONNECTOR (MALE)	1	
B202		VJP2965C030	CONNECTOR (MALE)	1	
B203		VJP2962C014	CONNECTOR (MALE)	1	
			CAPACITORS		
C101		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C102		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C103		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C104,05		ECUX1H101JCQ	C.CAPACITOR CH 50V 100P	2	
C106		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C109		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C110		ECUX1H560JCQ	C.CAPACITOR CH 50V 56P	1	
C115		ECEV05A470	E.CAPACITOR 4V 47U	1	
C116		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C118		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C120		ECRJA020E11		1	
C121		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C122		ECST1AY225Z	T.CAPACITOR 10V 2.2U	1	
C124		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C130		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C133		ECUX1E102KBQ	C.CAPACITOR CH 25V 1000P	1	
C134		ECUX1H680JCV	C.CAPACITOR CH 50V 68P	1	
C136		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C137		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C153		ECUX1H681KBV	C.CAPACITOR CH 50V 680P	1	
C154		ECUX1E102KBQ	C.CAPACITOR CH 25V 1000P	1	
C155		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C201		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C202		ECST1VX225Z	T.CAPACITOR CH 35V 2.2U	1	
C203		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C204		ECST1CX685Z	T.CAPACITOR CH 16V 6.8U	1	
C205		ECEV1VA4R7	E.CAPACITOR CH 35V 4.7U	1	
C206		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C207		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C208		ECST1CX685Z	T.CAPACITOR CH 16V 6.8U	1	
C210		ECUM1C474ZFN	C.CAPACITOR 16V 0.47U	1	
C212		ECST1AX106Z	T.CAPACITOR CH 10V 10U	1	
C213		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C214		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C215		ECUX1H080CCV	C.CAPACITOR CH 50V 8P	1	
C216		ECUX1H150JCQ	C.CAPACITOR CH 50V 15P	1	
C217		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C219		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C220		ECRJA020E11		1	
C221		ECUW1H150JCQ	CAPACITOR	1	
C222		ECUM1H100DCQ	C.CAPACITOR CH 50V 10P	1	
C223		ECST1AY475Z	T.CAPACITOR CH 10V 4.7U	1	
C224		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C225		ECUX1C473ZFV	C.CAPACITOR CH 16V 0.047U	1	
C226		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C227		ECST0GX226Z	T.CAPACITOR CH 4V 22U	1	
C228,29		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C230		ECST1CX685Z	T.CAPACITOR CH 16V 6.8U	1	
C231		ECUM1H100DCQ	C.CAPACITOR CH 50V 10P	1	
C232		ECST1CX685Z	T.CAPACITOR CH 16V 6.8U	1	
C233		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C234-36		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	3	
C237		ECEV1CA470P	E.CAPACITOR 16V 47U	1	
C238		ECUX1C473ZFV	C.CAPACITOR CH 16V 0.047U	1	
C239-45		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	7	
C246-49		ECUW1H150JCQ	CAPACITOR	4	
C250		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C264		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C266		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C268		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C271		ECEV1CAS100	E.CAPACITOR CH 16V 10U	1	
C272,73		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	2	
C274		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C275,76		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	2	
C277		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C281		ECEV0JA101	E.CAPACITOR 6.3V 100U	1	
C282		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C283		ECUX1H120JCQ	C.CAPACITOR CH 50V 12P	1	
C291		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C293		ECUX1E102KBQ	C.CAPACITOR CH 25V 1000P	1	
C294		ECST1VX155Z	T.CAPACITOR CH 35V 1.5U	1	
C705		ECEV1CAS100	E.CAPACITOR CH 16V 10U	1	
C706		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C707		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C708		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C709		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C710,11		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	2	
C712		ECUX1C473ZFV	C.CAPACITOR CH 16V 0.047U	1	
C713,14		ECST0JY106Z	T.CAPACITOR 6.3V 10U	2	
C717		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C721-24		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	4	
C725		ECUM1C683ZFV	C.CAPACITOR CH 16V 0.068U	1	
C729		ECUX1E102KBQ	C.CAPACITOR CH 25V 1000P	1	
C730		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C731		ECEV05A470	E.CAPACITOR 4V 47U	1	
C732		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C733		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C734		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C735		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C744,45		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C752		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C753,54		ECUX1E102KBQ	C.CAPACITOR CH 25V 1000P	2	
C755		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C770		ECUX1H560JCQ	C.CAPACITOR CH 50V 56P	1	
C790		ECUX1H332KBV	C.CAPACITOR CH 50V 3300P	1	
C792		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C793		ECEV0JA101	E.CAPACITOR 6.3V 100U	1	
C795		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C796		ECEV1CA470P	E.CAPACITOR 16V 47U	1	
			DIODES		
D101		1SS352TPH3	DIODE	1	
D103		MA334B	DIODE	1	
D104		1SS352TPH3	DIODE	1	
D201		1SS352TPH3	DIODE	1	
D202		MA133	DIODE	1	
D203		1SS352TPH3	DIODE	1	
D204		MA728	DIODE	1	
D205		1SS352TPH3	DIODE	1	
D208-11		1SS352TPH3	DIODE	4	
D701		1SS352TPH3	DIODE	1	
D702		MA133	DIODE	1	
FL701		VLF0883		1	
			CONNECTORS		
FP201		VJS2960A012	CONNECTOR (FEMALE)	1	
FP202		VJS2960A020	CONNECTOR (FEMALE)	1	
FP203		VJS2958D018	CONNECTOR (FEMALE)	1	
			INTEGRATED CIRCUITS		
IC102		S8052ANBNE	IC	1	
IC104		MN1551VFMA	IC	1	
IC105		S8054ALBLM	IC	1	
IC106		MN73039VSMS	IC	1	
IC107		MN4464S-08LL	IC	1	
IC112		TC7S08F	IC	1	
IC201		MN5145-2	IC	1	
IC202		MN3110SA	IC	1	
IC203		AN2012SB	IC	1	
IC204		AN2015FAP	IC	1	
IC205,06		TC7S08F	IC	2	
IC701		LM358DB	IC	1	
IC702		AN2585FAP	IC	1	
IC703		MN67801VLGA	IC	1	
IC704		TB6503AF	IC	1	
IC705		AN6663S	IC	1	
IC706		AN6545SP	IC	1	
IC709		LM324DB	IC	1	
IC710		MN1551VUSA	IC	1	
IC712		TC4W53F	IC	1	
IC713		S8054ALBLM	IC	1	
			COILS		
L101		ELJPA470KB	COIL 47UH	1	
L102,03		ELJFC150KB	COIL 15UH	2	
L108		ELJFC4R7KB	COIL 4.7UH	1	
L202,03		ELJFC150KB	COIL 15UH	2	
L204		ELJFA150KB	COIL 15UH	1	
L205-07		ELJFC150KB	COIL 15UH	3	
L208		ELJFA150KB	COIL 15UH	1	
L209		ELJFC150KB	COIL 15UH	1	
L210		ELJFC220KF	COIL 22UH	1	
L211		ELJFC150KB	COIL 15UH	1	
L212		ELJSC330KB	COIL 33UH	1	
L213		ELJFC120KB	COIL 12UH	1	
L214-16		VLQ0556	COIL	3	
L220		ELJSC820KB	COIL 82UH	1	
L701		ELJFC150KB	COIL 15UH	1	
L703		ELJFA150KB	COIL 15UH	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
L705,06		ELJFA101KB	COIL 100UH	2	
L707		ELJFA150KB	COIL 15UH	1	
			TRANSISTORS		
Q106		2SD2216	TRANSISTOR	1	
Q201		2SD2216	TRANSISTOR	1	
Q203		2SC4627	TRANSISTOR	1	
Q204-06		2SD2216	TRANSISTOR	3	
Q213		2SA1610	TRANSISTOR	1	
Q214		2SC4176	TRANSISTOR	1	
Q215		2SA1610	TRANSISTOR	1	
Q216		2SC4176	TRANSISTOR	1	
Q217		2SC4627	TRANSISTOR	1	
Q218		2SB1462	TRANSISTOR	1	
Q219,20		2SA1790	TRANSISTOR	2	
Q221		2SD2216	TRANSISTOR	1	
Q222		2SB1462	TRANSISTOR	1	
Q704,05		2SD2216	TRANSISTOR	2	
			COMBINATION PARTS		
QR101		UN9210	TRANSISTOR-RESISTOR	1	
QR102		UN9212	TRANSISTOR-RESISTOR	1	
QR104		UN9214	TRANSISTOR-RESISTOR	1	
QR105		UN9213	TRANSISTOR-RESISTOR	1	
QR701		UN9211	TRANSISTOR-RESISTOR	1	
			RESISTORS		
R101-06		ERJ2GEJ104	M.RESISTOR CH 2W 100K	6	
R107,08		ERJ2GEJ333	M.RESISTOR CH 2W 33K	2	
R109		ERJ2GEJ332	M.RESISTOR CH 2W 3.3K	1	
R110		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R111		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R112		ERJ2GEJ104	M.RESISTOR CH 2W 100K	1	
R114		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R115		ERJ2GEJ104	M.RESISTOR CH 2W 100K	1	
R116		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R117		ERJ2GEJ104	M.RESISTOR CH 2W 100K	1	
R118		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R124		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R125		ERJ2GEJ333	M.RESISTOR CH 2W 33K	1	
R126		ERJ3GEYG473	M.RESISTOR CH 1/16W 47K	1	
R127		ERJ3GEYG133	M.RESISTOR CH 1/16W 13K	1	
R128		ERJ3GEYG223	M.RESISTOR CH 1/16W 22K	1	
R133		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R134,35		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R144		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R146		ERJ2GEJ105	M.RESISTOR CH 2W 1M	1	
R147		ERJ2GEJ153	M.RESISTOR CH 2W 15K	1	
R148		ERJ2GEJ333	M.RESISTOR CH 2W 33K	1	
R149		ERJ2GEJ332	M.RESISTOR CH 2W 3.3K	1	
R151		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R152		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R153-55		ERJ3GEYJ330	M.RESISTOR CH 1/16W 33	3	
R201		ERJ2GEJ333	M.RESISTOR CH 2W 33K	1	
R202		ERJ2GEJ105	M.RESISTOR CH 2W 1M	1	
R203		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R204		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R205		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R208		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R209		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R210		ERJ2GEJ123	M.RESISTOR CH 2W 12K	1	
R211		ERJ2GEJ105	M.RESISTOR CH 2W 1M	1	
R212		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R213		ERJ2GEJ822	M.RESISTOR CH 2W 8.2K	1	
R214		ERJ2GEJ105	M.RESISTOR CH 2W 1M	1	
R215		ERJ3GEYJ121	M.RESISTOR CH 1/16W 120	1	
R216		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R217		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R218,19		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	2	
R220		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R221		ERJ2GEJ332	M.RESISTOR CH 2W 3.3K	1	
R227-29		ERJ2GEJ103	M.RESISTOR CH 2W 10K	3	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R230,31		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R232		ERJ2GEJ560	M.RESISTOR CH 2W 56	1	
R233		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R234		ERJ2GEJ221	M.RESISTOR CH 2W 220	1	
R235		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R236		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R237		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R240		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R241		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R242		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R244		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R245		ERJ2GEJ822	M.RESISTOR CH 2W 8.2K	1	
R246		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R247		ERJ2GEJ332	M.RESISTOR CH 2W 3.3K	1	
R248,49		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R253		ERJ2GEJ124	M.RESISTOR CH 2W 120K	1	
R254		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R256		ERJ2GEJ563	M.RESISTOR CH 2W 56K	1	
R270		ERJ2GEJ221	M.RESISTOR CH 2W 220	1	
R273		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R275		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R289		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R290		ERJ2GEJ105	M.RESISTOR CH 2W 1M	1	
R291		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R292		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R293		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R294		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R295		ERJ2GEJ271	M.RESISTOR CH 2W 270	1	
R299		ERJ3GEYJ220	M.RESISTOR CH 1/16W 22	1	
R701		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R702		ERJ2GEJ105	M.RESISTOR CH 2W 1M	1	
R703		ERJ2GEJ563	M.RESISTOR CH 2W 56K	1	
R704,05		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R706		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R707		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R708		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R709		ERJ2GEJ123	M.RESISTOR CH 2W 12K	1	
R710		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R711		ERJ2GEJ123	M.RESISTOR CH 2W 12K	1	
R712,13		ERJ2GEJ124	M.RESISTOR CH 2W 120K	2	
R715		ERJ2GEJ333	M.RESISTOR CH 2W 33K	1	
R716		ERJ3GEYG472	M.RESISTOR CH 1/16W 4.7K	1	
R718		ERJ2GEJ334	M.RESISTOR CH 2W 330K	1	
R719		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R729,30		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R731,32		ERJ2GEJ563	M.RESISTOR CH 2W 56K	2	
R733		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R734,35		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R736		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R737		ERJ2GEJ273	M.RESISTOR CH 2W 27K	1	
R738,39		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R740		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R750		ERJ3GEYG303	M.RESISTOR CH 1/16W 30K	1	
R751		ERJ3GEYG103	M.RESISTOR CH 1/16W 10K	1	
R752		ERJ2GEJ333	M.RESISTOR CH 2W 33K	1	
R763		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R764		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R765		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R766		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R767		ERJ2GEJ154	M.RESISTOR CH 2W 150K	1	
R768		ERJ2GEJ823	M.RESISTOR CH 2W 82K	1	
R769		ERJ2GEJ225	M.RESISTOR CH 2W 2.2M	1	
R770		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R771		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R775		ERJ3GEYJ6R8	M.RESISTOR CH 1/16W 6.8K	1	
R780		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R781		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R782		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R790,91		ERJ3GEYJ5R6	M.RESISTOR CH 1/16W 5.6	2	
R795		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R796		ERJ2GEJ123	M.RESISTOR CH 2W 12K	1	
R797-99		ERJ2GEJ223	M.RESISTOR CH 2W 22K	3	
			VARIABLE RESISTORS		
VR203		EVM7JSX30B25	V.RESISTOR 200K	1	
VR205		EVM7JSX30B13	V.RESISTOR 1K	1	
VR703		EVM7JSX30B14	V.RESISTOR 10K	1	
VR704		EVM7JSX30B54	V.RESISTOR 50K	1	
			CRYSTAL OSCILLATORS		
X101		VSX0412	CRYSTAL OSCILLATOR	1	
X102		VSX0432	CRYSTAL OSCILLATOR	1	
X201		VSX0448	CRYSTAL OSCILLATOR	1	
X701		EF0V8004B0A	CRYSTAL OSCILLATOR	1	
X702		EF0V4194B0A	CRYSTAL OSCILLATOR	1	
X703		EF0V6754B0A	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VSC3345	SHIELD COVER (A)	1	
		VYQ0704	SHIELD COVER (B)	1	
		VMZ1897	SHIELD BARRIER	1	
	■	VEP23127A	PROCESS C.B.A.		(NLA)
			CONNECTRORS		
B301		VJS3024C032	CONNECTOR (FEMALE)	1	
B302		VJS3158C030	CONNECTOR (FEMALE)	1	
B303		VJP2962C010	CONNECTOR (MALE)	1	
			CAPACITORS		
C301,02		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	2	
C306		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C307		ECUX1H150JCQ	C.CAPACITOR CH 50V 15P	1	
C309		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C310		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C312		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C313		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	1	
C316		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C321		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C322,23		ECUM1C105ZFN	C.CAPACITOR 16V 1U	2	
C324		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C331,32		ECST0JY106Z	T.CAPACITOR 6.3V 10U	2	
C335		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C341		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C342		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C346		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C356-58		ECST0JY106Z	T.CAPACITOR 6.3V 10U	3	
C359		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C360		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C362		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C363		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C364		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C365		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C367		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C368,69		ECST0JY106Z	T.CAPACITOR 6.3V 10U	2	
C370-75		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	6	
C376		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C377		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C379		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C381		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C403		ECST0JY475Z	T.CAPACITOR 6.3V 4.7U	1	
C404		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C405		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C406		ECUX1C473ZFV	C.CAPACITOR CH 16V 0.047U	1	
C410,11		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	2	
C414		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C430		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			DIODES		
D301		MA728	DIODE	1	
FL301,02		ELB4C524		2	
FL303		ELB4G503		1	
			CONNECTORS		
FP301		VJS2958D018	CONNECTOR (FEMALE)	1	
FP302		VJS2959B016	CONNECTOR (FEMALE)	1	
			INTEGRATED CIRCUITS		
IC302		CXD1175AM	IC	1	
IC303		L7A0679	IC	1	
IC304		MN188166VQFA	IC	1	
IC305		MN6731FHP	IC	1	
IC306		MN6730FHP	IC	1	
IC307,08		MN4701S	IC	2	
IC309		MN65701FHP	IC	1	
IC310		MN1882410VQQ	IC	1	
IC311		L7A0388	IC	1	
IC315		MN73512XWAS	IC	1	
IC317		AN2355FAP	IC	1	
IC318		MN12821Q	IC	1	
IC319		LM311DB	IC	1	
IC320		M6M80021FP	IC	1	
IC330		M62352GP	IC	1	
			COILS		
L301		ELJFC6R8ZF	COIL 6.8UH	1	
L303		ELJFC6R8ZF	COIL 6.8UH	1	
L306-11		ELJFC6R8ZF	COIL 6.8UH	6	
L313		ELJFC6R8ZF	COIL 6.8UH	1	
L316		ELJFC6R8ZF	COIL 6.8UH	1	
L318,19		ELJFC6R8ZF	COIL 6.8UH	2	
L322		VLQ0291	COIL	1	
L323		ELJFC6R8ZF	COIL 6.8UH	1	
L324		ELJSC470KB	COIL 47UH	1	
L325		ELJFC6R8ZF	COIL 6.8UH	1	
			TRANSISTORS		
Q302		XP4501	TRANSISTOR-TRANSISTOR	1	
Q303		2SD2216	TRANSISTOR	1	
Q304		XP4401	TRANSISTOR	1	
Q305		2SB1462	TRANSISTOR	1	
Q306		XP4501	TRANSISTOR-TRANSISTOR	1	
Q307		2SC4627	TRANSISTOR	1	
			COMBINATION PARTS		
QR301		UN9214	TRANSISTOR-RESISTOR	1	
			RESISTORS		
R302		ERJ3GEYJ560	M.RESISTOR CH 1/16W 56	1	
R303		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R304		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R305,06		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R309		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R310		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R311		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R312		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R313		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R314		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R315		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R316		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R318		ERJ2GEJ562	M.RESISTOR CH 2W 5.6K	1	
R319,20		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	2	
R321		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R322		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R323-25		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	3	
R326		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R327		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R328		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R329		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R330		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R331		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R332		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R333		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R338		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R339,40		ERJ2GEJ183	M.RESISTOR CH 2W 18K	2	
R341		ERJ2GEJ123	M.RESISTOR CH 2W 12K	1	
R342		ERJ2GEJ182	M.RESISTOR CH 2W 1.8K	1	
R343		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R344		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R345		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R346		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R347		ERJ2GEJ333	M.RESISTOR CH 2W 33K	1	
R348		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R350		ERJ2GEJ332	M.RESISTOR CH 2W 3.3K	1	
R352		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R354		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R355		ERJ2GEJ332	M.RESISTOR CH 2W 3.3K	1	
R357,58		ERJ2GEJ332	M.RESISTOR CH 2W 3.3K	2	
R359		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R360		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R361		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R362		ERJ2GEJ682	M.RESISTOR CH 2W 6.8K	1	
R363-66		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	4	
R367-70		ERJ2GEJ682	M.RESISTOR CH 2W 6.8K	4	
R371		ERJ3GEYG333	M.RESISTOR CH 1/16W 33K	1	
R372		ERJ3GEYG133	M.RESISTOR CH 1/16W 13K	1	
R384		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R385		ERJ2GEJ562	M.RESISTOR CH 2W 5.6K	1	
R391		ERJ3GEYG153	M.RESISTOR CH 1/16W 15K	1	
R392-99		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	8	
R400,01		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R403-07		ERJ2GEJ682	M.RESISTOR CH 2W 6.8K	5	
R408-10		ERJ2GEJ102	M.RESISTOR CH 2W 1K	3	
R411-13		ERJ2GEJ682	M.RESISTOR CH 2W 6.8K	3	
R414,15		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R416-23		ERJ2GEJ103	M.RESISTOR CH 2W 10K	8	
R424		ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R425		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R426		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R427		ERJ2GEJ393	M.RESISTOR CH 2W 39K	1	
R428-30		ERJ2GEJ103	M.RESISTOR CH 2W 10K	3	
R433		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R434		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R435		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R436,37		ERJ2GEJ682	M.RESISTOR CH 2W 6.8K	2	
R438		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R439-49		ERJ2GEJ103	M.RESISTOR CH 2W 10K	11	
R452,53		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R477		ERJ3GEYG564	M.RESISTOR CH 1/16W 560K	1	
R478		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R480		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R494		ERJ2GEJ563	M.RESISTOR CH 2W 56K	1	
R497		ERJ2GEJ823	M.RESISTOR CH 2W 82K	1	
R498,99		ERJ2GEJ563	M.RESISTOR CH 2W 56K	2	
R517-56		ERJ2GEJ101	M.RESISTOR CH 2W 100	40	
R559-62		ERJ2GEJ103	M.RESISTOR CH 2W 10K	4	
R563		ERJ2GEJ154	M.RESISTOR CH 2W 150K	1	
R564,65		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	2	
R566		ERJ2GEJ562	M.RESISTOR CH 2W 5.6K	1	
			CRYSTAL OSCILLATORS		
X301		EFOV8004B0A	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VSC3348	SHIELD COVER (B)	1	
		VSC3556	SHIELD COVER (BOTTOM)	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP04347B	MIC C.B.A.		(NLA)
			CAPACITORS		
C4301		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C4302		ECUX1C123KBV	C.CAPACITOR CH 16V 0.012U	1	
C4304		ECUX1H471KBV	C.CAPACITOR CH 50V 470P	1	
C4305		ECUX1C153KBV	C.CAPACITOR CH 16V 0.015U	1	
C4306		ECUM1E183KBN	C.CAPACITOR CH 25V 0.018U	1	
C4307		ECUX1H391KBV	C.CAPACITOR CH 50V 390P	1	
C4308		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C4309		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C4310		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C4311		ECUM1C683KBN	C.CAPACITOR 16V 0.068U	1	
C4312		ECST1VY224Z	T.CAPACITOR CH 35V 0.22U	1	
C4313		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C4314		ECST1AY225Z	T.CAPACITOR 10V 2.2U	1	
C4315		ECEV0JA470	E.CAPACITOR 6.3V 47U	1	
C4316		ECEV0JA220	E.CAPACITOR 6.3V 22U	1	
C4317		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C4318		ECUM1E333KBN	C.CAPACITOR CH 50V 0.033U	1	
C4319		ECEV0JA470	E.CAPACITOR 6.3V 47U	1	
			DIODES		
D4301,02		MA8056-M	DIODE	2	
			INTEGRATED CIRCUITS		
IC4301,02		UPC4572G2	IC	2	
J4301		VJJ0289		1	
			CONNECTORS		
P4301		VJP2272	CONNECTOR(MALE)	1	
			TRANSISTORS		
Q4301		2SD2216	TRANSISTOR	1	
			RESISTORS		
R4301		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R4302		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4303		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4304		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R4305		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4306		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4307		ERJ3GEYJ124	M.RESISTOR CH 1/16W 120K	1	
R4308		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R4309		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R4310-12		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	3	
R4313,14		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	2	
R4315		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R4316		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4317		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R4318		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R4319		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R4320		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP28045A	EVF C.B.A.		(NLA)
			CAPACITORS		
C801		ECWU1C104JA	CAPACITOR	1	
C802		ECST1AV476Z	T.CAPACITOR CH 10V 47U	1	
C804		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C805		ECEV0JA101	E.CAPACITOR 6.3V 100U	1	
C806		ECUM1H152KBN	C.CAPACITOR CH 50V 1500P	1	
C807		ECUM1C105JBP	C.CAPACITOR CH 16V 1U	1	
C808		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C809		ECEV1CA470F	E.CAPACITOR CH 16V 47U	1	
C810		ECUM2A272JUM	C.CAPACITOR CH 10V 2700P	1	
C811		ECST1AV476Z	T.CAPACITOR CH 10V 47U	1	
C812		ECUX1H101JV	C.CAPACITOR CH 50V 100P	1	
C813		ECUM2H331KBM	C.CAPACITOR	1	
C814		ECEV1HAS010	E.CAPACITOR CH 50V 1U	1	
C815		ECUM2H331KBM	C.CAPACITOR	1	
C816		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C818		ECUM2H331KBM	C.CAPACITOR	1	
			DIODES		
D801		MA141A	DIODE	1	
D802		SFPL-52	DIODE	1	
IC801		XRA7146F		1	
			COILS		
L801		VLQ0469	COIL	1	
L802		ELH5L231	COIL	1	
L803		VLQ0319K470	COIL 47UH	1	
			CONNECTORS		
P801		VJP3125D004	CONNECTOR (MALE)	1	
P802		VJP3172D005	CONNECTOR (MALE)	1	
P803		VJP3125D003	CONNECTOR (MALE)	1	
P804		VJP1229T	CONNECTOR (MALE) 2P	1	
			TRANSISTORS		
Q802		2SD968A-S	TRANSISTOR	1	
Q803		2SA1532-B	TRANSISTOR	1	
			RESISTORS		
R801		ERJ6ENF2202	RESISTOR	1	
R802		ERJ6GMYJ3R9	M.RESISTOR CH 1/10W 3.9	1	
R805		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R808		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R809		ERJ3GEYJ394	M.RESISTOR CH 1/16W 390K	1	
R810		ERJ6GMYF104	M.RESISTOR	1	
R814		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R815		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R816		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R817		ERJ3GEYJ242	M.RESISTOR CH 1/16W 2.4K	1	
R818		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R819		ERJ6GMYJ395	M.RESISTOR CH 1/10W 3.9M	1	
R820		ERJ6GMYJ475	M.RESISTOR CH 1/10W 4.7M	1	
R821		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R823		ERJ3GEYJ3R9	M.RESISTOR CH 1/16W 3.9	1	
R824		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R826		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R827		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R828		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R829		ERJ6GMYF153	M.RESISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
T801		ECXC2802A		1	
			VARIABLE RESISTORS		
VR801		EVM7JSX30BE2	V.RESISTOR	1	
VR803		EVM7TSX00BV6	V.RESISTOR	1	
VR804		EVM7TSX00BE6	V.RESISTOR	1	
			MISCELLANEOUS		
		VEE7372	CRT SOCKET	1	
	■	VEP06807A	VTR OPERATION C.B.A.		(NLA)
			DIODES		
D6301		MA142K	DIODE	1	
D6302		MA142WA	DIODE	1	
D6303		MA142K	DIODE	1	
D6304-06		MA142WA	DIODE	3	
D6307		MA142K	DIODE	1	
			CONNECTORS		
P6301		VJP3172D005	CONNECTOR (MALE)	1	
P6302		VJP3160D017	CONNECTOR (MALE)	1	
P6303		VJP3125D002	CONNECTOR (MALE)	1	
P6304		VJP3125D005	CONNECTOR (MALE)	1	
			SWITCHES		
S6301-08		EVQPA401K	SWITCH	8	
S6310		EVQPA401K	SWITCH	1	
	■	VEP01491A	POWER C.B.A.		(NLA)<!>
			CAPACITORS		
C1001		ECUM1C335ZFM	C.CAPACITOR CH 16V 3.3U	1	
C1002		ECEV1CA470F	E.CAPACITOR CH 16V 47U	1	
C1003		ECGC0KA8R2		1	
C1004		ECUX1H331KBV	C.CAPACITOR CH 50V 330P	1	
C1005		ECST1AC226Z	T.CAPACITOR CH 10V 22U	1	
C1006		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C1007		ECEV1AA220	E.CAPACITOR CH 10V 22U	1	
C1008		ECGC0KA8R2		1	
C1009		ECUM1H331KBN	C.CAPACITOR CH 50V 330P	1	
C1010		ECST1CY335Z	T.CAPACITOR CH 16V 3.3U	1	
C1011		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C1012		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C1013		ECGC1BA4R7		1	
C1014		ECUX1H561KBV	C.CAPACITOR CH 50V 560P	1	
C1015		ECEV1AA470	E.CAPACITOR 10V 47U	1	
C1017		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C1019		ECUM1C474ZFM	C.CAPACITOR CH 16V 0.47U	1	
C1020		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C1022		ECUM1H104ZFM	C.CAPACITOR CH 50V 0.1U	1	
C1024		ECUM1C474ZFM	C.CAPACITOR CH 16V 0.47U	1	
C1025		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	1	
C1026		ECEV1HA010	E.CAPACITOR 50V 1U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C1027		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C1028		ECEV1HAR47	E.CAPACITOR CH 50V	1	
C1029		ECUX1H471KBV	C.CAPACITOR CH 50V 470P	1	
C1030		ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	1	
C1031		ECUX1H471KBV	C.CAPACITOR CH 50V 470P	1	
C1032		ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	1	
C1033-35		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	3	
C1036		ECUX1H471KBV	C.CAPACITOR CH 50V 470P	1	
C1037		ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	1	
C1041		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C1061		ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	1	
C1062		ECEV1CA470F	E.CAPACITOR CH 16V 47U	1	
C1063		ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	1	
C1064		ECEV1CA470F	E.CAPACITOR CH 16V 47U	1	
C1065,66		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	2	
C1104,05		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	2	
C6501		ECUM1C474ZFN	C.CAPACITOR 16V 0.47U	1	
			DIODES		
D1001		MA738	DIODE	1	
D1002		MA736	DIODE	1	
D1003		MA132WA	DIODE	1	
D1004		MA736	DIODE	1	
D1005		MA720	DIODE	1	
D1006,07		MA132K	DIODE	2	
D1008		RD10M		1	
D1010,11		RD13M	DIODE	2	
D1012		MA133	DIODE	1	
D1061,62		MA720	DIODE	2	
D1063,64		MA728	DIODE	2	
D1106		MA132K	DIODE	1	
D6501		MA132WA	DIODE	1	
D6502		CL150UR-T	DIODE	1	
			INTEGRATED CIRCUITS		
IC1001		BA9703K	IC	1	
IC1101		RH5RA50AAT1	IC	1	
J1001		VEK5444		1	
J6501		VJR0670		1	
J6502		VJR0671		1	
			COILS		
L1001		ELL04T502R		1	
L1002		ELL04T004R	TRANSFORMER	1	
L1003		ELL04T502R		1	
L1004		ELJPA100KB	COIL 10UH	1	
L1006		ELJPA470KB	COIL 47UH	1	
L1007		ELL04T017R	COIL	1	
L1008		ELL04T502R		1	
L1009		ELJPA100KB	COIL 10UH	1	
L1010,11		ELJPA101KB	COIL 100UH	2	
L1061,62		ELL04T005R	TRANSFORMER	2	
L1101		ELJPA101KB	COIL 100UH	1	
L1102,03		VLP0113	COIL	2	
			CONNECTORS		
P1001		VJS2959B018	CONNECTOR (FEMALE)	1	
P6501		VJS2961C032	CONNECTOR (FEMALE)	1	
			TRANSISTORS		
Q1001-03		2SB1073	TRANSISTOR	3	
Q1004		2SD2210	TRANSISTOR	1	
Q1061,62		2SB1073	TRANSISTOR	2	
Q1101		2SB970X	TRANSISTOR	1	
Q1102		2SB1462	TRANSISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			COMBINATION PARTS		
QR1001		UN9111	TRANSISTOR-RESISTOR	1	
QR1002		UN9214	TRANSISTOR-RESISTOR	1	
QR1003		UN9115	TRANSISTOR-RESISTOR	1	
QR1004		UN9214	TRANSISTOR-RESISTOR	1	
QR1005		UN9114		1	
QR1006		XP1501		1	
QR1061		UN9115	TRANSISTOR-RESISTOR	1	
QR1101		UN9213	TRANSISTOR-RESISTOR	1	
			RESISTORS		
R1001		ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R1002		ERJ6GEYJ202	M.RESISTOR CH 1/10W 2K	1	
R1003		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R1004		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R1005		ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R1006		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R1007		ERJ8GEYJ330	M.RESISTOR CH 1/8W 33	1	
R1008		ERJ6GEYG123	M.RESISTOR CH 1/10W 12K	1	
R1009		ERJ6GEYG182	M.RESISTOR CH 1/10W 1.8K	1	
R1012		ERJ3GEYG183	M.RESISTOR CH 1/16W 18K	1	
R1013		ERJ3GEYG393	M.RESISTOR CH 1/16W 39K	1	
R1014,15		ERJ3GEYG182	M.RESISTOR CH 1/16W 1.8K	2	
R1016		VRE0034E153	M.RESISTOR CH 1/10W 15K	1	
R1017		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R1018		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R1019		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R1020		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R1021		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R1022		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R1023		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R1024		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R1025		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R1029		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R1030		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R1031		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R1061,62		ERJ6GEYJ391	M.RESISTOR CH 1/10W 390	2	
R1063		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R1064,65		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	2	
R1101		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R1102		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R1103		ERJ3GEYJ124	M.RESISTOR CH 1/16W 120K	1	
R1104		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R1115		VSF0092	RESISTOR	1	
R6501		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
			SWITCHES		
S6501		VSS0348		1	
S6502		VSP0591	SWITCH	1	
			TRANSFORMERS		
T1001		ELL04T006R	TRANSFORMER	1	
			VARIABLE RESISTORS		
VR1001,02		EVM7JSX30B13	V.RESISTOR 1K	2	
VR1003		EVM7JSX30B52	V.RESISTOR 5.2K	1	
			MISCELLANEOUS		
		VMZ1896	SHIELD BARRIER	1	
		VMZ1908	SHIELD BARRIER (2)	1	
		VMZ1929	AV JACK BARRIER	1	
		VGQ2498	BATTERY HOLDER	1	
		VGQ2598	LED COVER	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP06806A	MAIN C.B.A.		(NLA)
			CAPACITORS		
C03,04		ECUZ1C473KBV	CAPACITOR	2	
C05		ECUX1E223ZFV	C.CAPACITOR CH 25V 0.022U	1	
C06		ECST1AY475Z	T.CAPACITOR CH 10V 4.7U	1	
C07		ECUX1E681JV	C.CAPACITOR CH 25V 680P	1	
C08		ECUX1H391JV	C.CAPACITOR CH 50V 390P	1	
C11		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C12		ECUM1H100DCQ	C.CAPACITOR CH 50V 10P	1	
C13		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C14		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C15		ECUX1E223ZFV	C.CAPACITOR CH 25V 0.022U	1	
C16		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C17		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C18		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C19		ECUX1H561JV	C.CAPACITOR CH 50V 560P	1	
C20		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C21		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C24		ECST1AY475Z	T.CAPACITOR CH 10V 4.7U	1	
C25		ECUX1H332KBV	C.CAPACITOR CH 50V 3300P	1	
C26,27		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	2	
C3001,02		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	2	
C3004		ECUX1H120JCQ	C.CAPACITOR CH 50V 12P	1	
C3005		ECEV05A470	E.CAPACITOR 4V 47U	1	
C3006		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C3007		ECUM1H103KBM	C.CAPACITOR CH 50V 0.01U	1	
C3008		ECEV05A470	E.CAPACITOR 4V 47U	1	
C3010		ECST1AY475Z	T.CAPACITOR CH 10V 4.7U	1	
C3013		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C3014		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C3015,16		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C3017		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C3018		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C3019		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C3035		ECEV0GA221	E.CAPACITOR CH 4V 220U	1	
C3037		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C3038		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C3039		ECEV0GA101	E.CAPACITOR 4V 100U	1	
C3040		ECEV0GA221	E.CAPACITOR CH 4V 220U	1	
C3041		ECST1AY475Z	T.CAPACITOR CH 10V 4.7U	1	
C3042		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C3043		ECUX1H120JCQ	C.CAPACITOR CH 50V 12P	1	
C3044		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C3046		ECST1AX106Z	T.CAPACITOR CH 10V 10U	1	
C3047		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C3053		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C3056		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C3057		ECEV1EAS4R7	E.CAPACITOR CH 25V 4.7U	1	
C3060		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C3061		ECUX1H221KBV	C.CAPACITOR CH 50V 220P	1	
C3062		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C3064		ECEV1CAN4R7	E.CAPACITOR CH 16V 4.7U	1	
C3104		ECUX1H560JCQ	C.CAPACITOR CH 50V 56P	1	
C3117		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C3118		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C3119		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C3123		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C3124		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C3125		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C3127		ECUX1H391JCV	C.CAPACITOR CH 50V 390P	1	
C3128		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C3129		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	1	
C3130		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C3131		ECUX1H560JCQ	C.CAPACITOR CH 50V 56P	1	
C3132		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C3133		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C3134		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3135		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C3136		ECUX1H271JCV	C.CAPACITOR CH 50V 270P	1	
C3137		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C3138		ECUX1H120JCQ	C.CAPACITOR CH 50V 12P	1	
C3140		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C4001		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C4002		ECEV0JAN220	E.CAPACITOR 6.3V 22U	1	
C4003		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C4004		ECST1CY225Z	T.CAPACITOR CH 16V 2.2U	1	
C4005		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C4006		ECUM1H123KBN	C.CAPACITOR CH 50V 0.012U	1	
C4007		ECUX1C153KBV	C.CAPACITOR CH 16V 0.015U	1	
C4008		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C4009		ECST1CY225Z	T.CAPACITOR CH 16V 2.2U	1	
C4010		ECUX1H272KBV	C.CAPACITOR CH 50V 2700P	1	
C4011		ECUX1H122KBV	C.CAPACITOR CH 50V 1200P	1	
C4012		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C4013		ECST1CY335Z	T.CAPACITOR CH 16V 3.3U	1	
C4014		ECUX1C153KBV	C.CAPACITOR CH 16V 0.015U	1	
C4015		ECEV0JA470	E.CAPACITOR 6.3V 47U	1	
C4016		ECST1CY335Z	T.CAPACITOR CH 16V 3.3U	1	
C4017		ECST1CY225Z	T.CAPACITOR CH 16V 2.2U	1	
C4018		ECST1CY335Z	T.CAPACITOR CH 16V 3.3U	1	
C4019		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C4020		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C4021		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C4022		ECST1AX106Z	T.CAPACITOR CH 10V 10U	1	
C4023		ECUM1E223KBN	C.CAPACITOR CH 25V 0.023U	1	
C4024		ECUX1E123KBV	C.CAPACITOR CH 25V 0.012U	1	
C4025		ECUM2A682JCM	C.CAPACITOR CH 10V 6800P	1	
C4026		ECUX1H391JCV	C.CAPACITOR CH 50V 390P	1	
C4031		ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	1	
C4032		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C4033		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C4036		ECST1CY225Z	T.CAPACITOR CH 16V 2.2U	1	
C4045		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C4046		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C4047,48		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	2	
C4049		ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	1	
C4050		ECUX1H562KBV	C.CAPACITOR CH 50V 5600P	1	
C4051		ECST1AX106Z	T.CAPACITOR CH 10V 10U	1	
C4052		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C4053		ECST0GC476Z	T.CAPACITOR CH 4V 47U	1	
C4054		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C5004		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C5005		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C5006		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C5007		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C5008		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C5009		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C5010		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C5011		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5012		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C5013		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C5014		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C5015		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C5016		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C5017		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5018		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C5019		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C5020,21		ECUM1H100DCQ	C.CAPACITOR CH 50V 10P	2	
C5022		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C5023		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C5025		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C5026		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C5027,28		ECUM1H100DCQ	C.CAPACITOR CH 50V 10P	2	
C5029-31		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	3	
C5032		ECUX1C473ZFV	C.CAPACITOR CH 16V 0.047U	1	
C5033,34		ECUM1E333KBN	C.CAPACITOR CH 50V 0.033U	2	
C5035,36		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	2	
C5038		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C5039		ECUX1H121JCV	C.CAPACITOR CH 50V 120P	1	
C5040		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C5041		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C5042		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C5044,45		ECUM1E333KBN	C.CAPACITOR CH 50V 0.033U	2	
C5046		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C5050		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6001,02		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	2	
C6003,04		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C6006		ECEV0JA220	E.CAPACITOR 6.3V 22U	1	
C6007		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6008		ECUM1C105KB	C.CAPACITOR CH 16V 1U	1	
C6009		ECEV1HA3R3	E.CAPACITOR 50V 3.3U	1	
C6011-13		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C6014		ECUM1C225ZFM	C.CAPACITOR CH 16V 2.2U	1	
C6015		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6016		ECEV1CA220	E.CAPACITOR CH 16V 22U	1	
C6017		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C6018-29		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	12	
C6101		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	1	
C6102		ECRJA030E11	TRIMMER	1	
C6104		ECUM1C474ZFN	C.CAPACITOR 16V 0.47U	1	
C6105		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C6106		ECST1AC226Z	T.CAPACITOR CH 10V 22U	1	
C6107		ECUX1H050CCV	C.CAPACITOR CH 50V 5P	1	
C6108		ECRJA030E11	TRIMMER	1	
C6109		ECEV1CA100	E.CAPACITOR 16V 10U	1	
C6110		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6113		ECUX1H050CCV	C.CAPACITOR CH 50V 5P	1	
C6115		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C6116		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C6116		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6201		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6202		ECST1AX106Z	T.CAPACITOR CH 10V 10U	1	
C6206		ECUX1E223ZFV	C.CAPACITOR CH 25V 0.022U	1	
C6207		ECEV1EAS4R7	E.CAPACITOR CH 25V 4.7U	1	
C6208		ECST1AX106Z	T.CAPACITOR CH 10V 10U	1	
C6209		ECUX1H561KBV	C.CAPACITOR CH 50V 560P	1	
C6210,11		ECUM1C105KB	C.CAPACITOR CH 16V 1U	2	
C6212		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6213		ECQB1C273JH	P.CAPACITOR CH 16V 0.027U	1	
C6214		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C6215		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C6216		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6217		ECST1AY225Z	T.CAPACITOR 10V 2.2U	1	
C6218		ECST0GY156Z	T.CAPACITOR CH 4V 15U	1	
C6219		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C8001		ECUX1H391JCV	C.CAPACITOR CH 50V 390P	1	
C8003		ECUX1H221KBV	C.CAPACITOR CH 50V 220P	1	
C8004		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C8005		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	
C8007-10		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	4	
C8011		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C8012		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C8013		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C8014		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C8015		ECST0GC476Z	T.CAPACITOR CH 4V 47U	1	
C8016-18		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	3	
C8021		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C8022,23		ECST1AX106Z	T.CAPACITOR CH 10V 10U	2	
C8024-27		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	4	
C8028,29		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	2	
C8031		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C8032		ECUX1C123KBV	C.CAPACITOR CH 16V 0.012U	1	
C8033		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C8034		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C8035		ECST1CY225Z	T.CAPACITOR CH 16V 2.2U	1	
C8037		ECUM1C185ZFN	C.CAPACITOR CH 16V 1.8U	1	
C8038		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C8039		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C8040		ECUM1C474ZFN	C.CAPACITOR 16V 0.47U	1	
C8041		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C8043		ECST1AY475Z	T.CAPACITOR CH 10V 4.7U	1	
C8044		ECUX1H562KBV	C.CAPACITOR CH 50V 5600P	1	
C8046		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C8047		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C8048		ECUX1H070DCV	C.CAPACITOR CH 50V 7P	1	
C8049		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C8050		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C8051		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C8053		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C8054		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C8055		ECUM1E103ZFQ	C.CAPACITOR CH 25V 0.01U	1	
C8056		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C8057		ECST1CY225Z	T.CAPACITOR CH 16V 2.2U	1	
C8058		ECRKN030G21	TRIMMER	1	
			DIODES		
D01		MA110	DIODE	1	
D3001		MA132WK	DIODE	1	
D3007		MA132WA	DIODE	1	
D3015,16		MA132K	DIODE	2	
D3101		MA141WK	DIODE	1	
D4002		MA132WK	DIODE	1	
D5002		MA132WK	DIODE	1	
D5003		MA132WA	DIODE	1	
D5004		MA159	DIODE	1	
D6001		MA133	DIODE	1	
D6003		MA132WK	DIODE	1	
D6004		MA121	DIODE	1	
D6005,06		MA139	DIODE	2	
D6007		MA132WK	DIODE	1	
D6009,10		MA132K	DIODE	2	
D6011,12		MA736	DIODE	2	
D6013,14		MA3130	DIODE	2	
D6103,04		MA132K	DIODE	2	
D6105		MA704	DIODE	1	
D6111-13		MA132K	DIODE	3	
D8001		MA132WK	DIODE	1	
			DELAYS		
DL8001		EFDSS124A13A	DELAY	1	
			FILTERS		
FL3002		ELB4D533	FILTER	1	
FL8001		VLF0887	FILTER	1	
FL8002		ELB3H001	FILTER	1	
			INTEGRATED CIRCUITS		
IC01		AN2265FAS-A	IC	1	
IC3001		VEFH18B	HIC	1	
IC3002		TL8809FE	IC	1	
IC3004		AN3580SB	IC	1	
IC3005		NJM2235MA	IC	1	
IC4001		BA7757BK	IC	1	
IC5001		AN3345FAS	IC	1	
IC6001		MN6755242VJC	IC	1	
IC6002		RH5RE50AA	IC	1	
IC6004		M54543AFP	IC	1	
IC6005		TC4S66F	IC	1	
IC6006		LM393DB	IC	1	
IC6007		MN12821R	IC	1	(R)
IC6008		LM393DB	IC	1	
IC6101		TC4W53F		1	
IC6103		UPD17401G529	IC	1	
IC6104		S8420BF		1	
IC6105		TC7W04F		1	
IC8001		AN2465NFHP	IC	1	
			COILS		
L3002		ELJFA101KB	COIL 100UH	1	
L3004,05		ELJPA330KB	COIL 33UH	2	
L3007		ELJPA101KB	COIL 100UH	1	
L3009		ELJPA150KB	COIL 15UH	1	
L3012		ELJSC470JB	COIL 47UH	1	
L3013		VLQ0426J470	COIL 47UH	1	
L3018-21		VLQ0555	COIL	4	
L3105		ELJSC470JB	COIL 47UH	1	
L3107		ELJPA101KB	COIL 100UH	1	
L3108		ELJFA181KB	COIL 180UH	1	
L3109		ELJSC330JB	COIL 33UH	1	
L3110		ELJPA150KB	COIL 15UH	1	
L3111		VLQ0426J3R9	COIL 3.9UH	1	
L3112		ELJFA221KB	COIL 220UH	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
L3113		ELJFC120JB	COIL 12UH	1	
L3114		ELJFC180JB	COIL 18UH	1	
L3115		ELJFA101KB	COIL 100UH	1	
L4001		ELTMR153KF		1	
L4003		VLQ0319K470	COIL 47UH	1	
L4005		VLQ0319K101	COIL 100UH	1	
L5001,02		ELJPA101KB	COIL 100UH	2	
L5003		ELJPA470KB	COIL 47UH	1	
L5004		ELJPA101KB	COIL 100UH	1	
L5005		ELJFC120JB	COIL 12UH	1	
L6101		ELJPA560KB	COIL 56UH	1	
L6201		ELJPA100KB	COIL 10UH	1	
L8001		ELJFC220JB	COIL 22UH	1	
L8002		ELJFC100JB	COIL 10UH	1	
L8005		VLQ0218K471	COIL 470UH	1	
L8007		VLQ0426J6R8	COIL 6.8UH	1	
L8008,09		ELJPA150KB	COIL 15UH	2	
			CONNECTORS		
P3001		VJP3171D010	CONNECTOR (MALE)	1	
P3002		VJS2960A018	CONNECTOR (FEMALE)	1	
P4001		VJP3125D003	CONNECTOR (MALE)	1	
P4002		VJS2959B009	CONNECTOR (FEMALE)	1	
P5001		VJS2959B013	CONNECTOR (FEMALE)	1	
P6002		VJP3126D032	CONNECTOR (MALE)	1	
P6003		VJS2959B016	CONNECTOR (FEMALE)	1	
P6004		VJS2959B006	CONNECTOR (FEMALE)	1	
P6005		VJP3125D002	CONNECTOR (MALE)	1	
P6102		VJS2959B006	CONNECTOR (FEMALE)	1	
P6103		VJS2964A017	CONNECTOR (FEMALE)	1	
P6201		VJS2961C022	CONNECTOR (FEMALE)	1	
			TRANSISTORS		
Q3001		2SB970X	TRANSISTOR	1	
Q3002		XP4601	TRANSISTOR-TRANSISTOR	1	
Q3006		2SD2216	TRANSISTOR	1	
Q3007		2SB1462	TRANSISTOR	1	
Q3104		2SC4627	TRANSISTOR	1	
Q3106		2SC4627	TRANSISTOR	1	
Q3108		2SD2216	TRANSISTOR	1	
Q3110		2SC4627	TRANSISTOR	1	
Q3112		2SD2216	TRANSISTOR	1	
Q4001		2SD1328	TRANSISTOR CHIP	1	
Q4002		2SB1463	TRANSISTOR	1	
Q4003,04		2SD2216	TRANSISTOR	2	
Q4005		2SB970X	TRANSISTOR	1	
Q4006		2SD602-R	TRANSISTOR	1	(R)
Q4010		2SD1819	TRANSISTOR	1	
Q4011		2SD2216	TRANSISTOR	1	
Q4012		2SD1328	TRANSISTOR CHIP	1	
Q4013		2SB1462	TRANSISTOR	1	
Q4014		2SD1328	TRANSISTOR CHIP	1	
Q5001		2SB970X	TRANSISTOR	1	
Q5003		XN4504	TRANSISTOR-TRANSISTOR	1	
Q5006		XN4504	TRANSISTOR-TRANSISTOR	1	
Q5007,08		2SA812	TRANSISTOR	2	
Q5009		2SB970X	TRANSISTOR	1	
Q6001		2SD2216	TRANSISTOR	1	
Q8002,03		2SC4627	TRANSISTOR	2	
Q8007		2SD2216	TRANSISTOR	1	
Q8009		2SC3938	TRANSISTOR	1	
Q8010		XP6501	TRANSISTOR	1	
Q8011,12		XP4601	TRANSISTOR-TRANSISTOR	2	
			COMBINATION PARTS		
QR01		UN9212	TRANSISTOR-RESISTOR	1	
QR3001		UN9212	TRANSISTOR-RESISTOR	1	
QR3010		UN9213	TRANSISTOR-RESISTOR	1	
QR3019,20		UN9212	TRANSISTOR-RESISTOR	2	
QR3101		UN9212	TRANSISTOR-RESISTOR	1	
QR3103		UN9211	TRANSISTOR-RESISTOR	1	
QR3107		UN9212	TRANSISTOR-RESISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
QR4001		UN9210	TRANSISTOR-RESISTOR	1	
QR4002		UN9213	TRANSISTOR-RESISTOR	1	
QR4003		UN9210	TRANSISTOR-RESISTOR	1	
QR5001		UN9212	TRANSISTOR-RESISTOR	1	
QR5002,03		XP4213	TRANSISTOR-RESISTOR	2	
QR6001		UN9112	TRANSISTOR-RESISTOR	1	
QR6002		XN4130X	TRANSISTOR-RESISTOR	1	
QR6003		XN1213	TWIN TRANSISTOR	1	
QR6004		UN9213	TRANSISTOR-RESISTOR	1	
QR6005		UN9210	TRANSISTOR-RESISTOR	1	
QR6006		FN3L4Z	RESISTOR-RESISTOR	1	
QR6010		UN9115	TRANSISTOR-RESISTOR	1	
QR6013		UN9213	TRANSISTOR-RESISTOR	1	
QR6015		UN2130X	TRANSISTOR-RESISTOR	1	
QR6018		UN9111	TRANSISTOR-RESISTOR	1	
QR6019		UN9213	TRANSISTOR-RESISTOR	1	
QR6103		XP1501		1	
QR8002-04		UN9212	TRANSISTOR-RESISTOR	3	
			VARIABLE RESISTORS		
R20		ERJ3GEYJ155	M.RESISTOR CH 1/16W 1.5M	1	
R21		ERJ2GEJ273	M.RESISTOR CH 2W 27K	1	
R29		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R32		ERJ2GEJ562	M.RESISTOR CH 2W 5.6K	1	
R35		ERJ2GEJ331	M.RESISTOR CH 2W 330	1	
R36		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R3001		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R3002		ERJ2GEJ822	M.RESISTOR CH 2W 8.2K	1	
R3003		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R3005		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R3006		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R3009		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R3010		ERJ2GEJ683	M.RESISTOR CH 2W 68K	1	
R3014		ERJ3GEYG682	M.RESISTOR CH 1/16W 6.8K	1	
R3015		ERJ3GEYG182	M.RESISTOR CH 1/16W 1.8K	1	
R3016		ERJ3GEYG682	M.RESISTOR CH 1/16W 6.8K	1	
R3019		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R3020		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R3024		ERJ3GEYJ560	M.RESISTOR CH 1/16W 56	1	
R3026		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R3027		ERJ3GEYJ684	M.RESISTOR CH 1/16W 680K	1	
R3046		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R3049		ERJ2GEJ683	M.RESISTOR CH 2W 68K	1	
R3051,52		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	2	
R3053,54		ERJ2GE0R00	M.RESISTOR CH 2W 0	2	
R3056		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R3057		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R3059		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R3060,61		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R3062		ERJ2GEJ562	M.RESISTOR CH 2W 5.6K	1	
R3063		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R3069		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R3080		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R3081		ERJ2GEJ334	M.RESISTOR CH 2W 330K	1	
R3082,83		ERJ2GEJ154	M.RESISTOR CH 2W 150K	2	
R3084		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R3085		ERJ2GEJ154	M.RESISTOR CH 2W 150K	1	
R3086		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R3091		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R3117		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R3118,19		ERJ2GEJ561	M.RESISTOR CH 2W 560	2	
R3120,21		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R3127,28		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R3129		ERJ2GEJ561	M.RESISTOR CH 2W 560	1	
R3131		ERJ2GEJ272	M.RESISTOR CH 2W 2.7K	1	
R3132		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R3133		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R3134		ERJ2GEJ332	M.RESISTOR CH 2W 3.3K	1	
R3135,36		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R3137		ERJ2GEJ561	M.RESISTOR CH 2W 560	1	
R3138,39		ERJ2GE0R00	M.RESISTOR CH 2W 0	2	
R3141		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R3142		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R3145		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R3146		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R3150		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R3153		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R3155		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R3160-63		ERJ2GE0R00	M.RESISTOR CH 2W 0	4	
R4001		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R4002		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R4003		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	1	
R4004		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R4005		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4006		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R4007		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4008		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R4009		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4010		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R4011		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R4012		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R4013		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R4014		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R4015		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R4016,17		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
R4018		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4019		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R4020		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R4021		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R4022		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R4023		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R4024		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R4025		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4026		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R4027		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4028		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R4029		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R4030		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R4031		ERJ3GEYJ390	M.RESISTOR CH 1/16W 39	1	
R4045		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R4046		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4051		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R4052		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4053		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R4055,56		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R4057		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R4058		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R4059		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R4060		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4061		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R4062		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R4063		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R4064		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4065		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R5002,03		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	2	
R5004		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R5005		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R5006		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
R5011-14		ERJ2GEJ223	M.RESISTOR CH 2W 22K	4	
R5015		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R5016		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R5017		ERJ2GEJ183	M.RESISTOR CH 2W 18K	1	
R5018		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R5019		ERJ2GEJ681	M.RESISTOR CH 2W 680	1	
R5020		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R5021		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R5022		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R5023		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R5024		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R5025,26		ERJ2GEJ681	M.RESISTOR CH 2W 680	2	
R5027		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R5028,29		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	2	
R5030,31		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	2	
R5033-35		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	3	
R5036,37		ERJ2GEJ681	M.RESISTOR CH 2W 680	2	
R5038		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R5039		ERJ2GEJ183	M.RESISTOR CH 2W 18K	1	
R5040		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R5041		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R5042		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R5043		ERJ6GEYJ4R7	M.RESISTOR CH 1/10W 4.7	1	
R5044		ERJ2GEJ104	M.RESISTOR CH 2W 100K	1	
R5045,46		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	2	
R5047		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R5048		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R5049		ERJ2GEJ393	M.RESISTOR CH 2W 39K	1	
R5050		ERJ2GEJ683	M.RESISTOR CH 2W 68K	1	
R5051-54		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	4	
R6001		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6003-11		ERJ2GEJ473	M.RESISTOR CH 2W 47K	9	
R6012-14		ERJ2GEJ102	M.RESISTOR CH 2W 1K	3	
R6016-20		ERJ2GEJ102	M.RESISTOR CH 2W 1K	5	
R6022-28		ERJ2GEJ102	M.RESISTOR CH 2W 1K	7	
R6029		ERJ2GEJ823	M.RESISTOR CH 2W 82K	1	
R6030,31		ERJ2GEJ473	M.RESISTOR CH 2W 47K	2	
R6034		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6035		ERJ2GEJ273	M.RESISTOR CH 2W 27K	1	
R6036		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R6037		ERJ2GEJ224	M.RESISTOR CH 2W 220K	1	
R6038		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R6039		ERJ8GEYJ390	M.RESISTOR CH 1/8W 39	1	
R6040		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R6041		ERJ2GEJ104	M.RESISTOR CH 2W 100K	1	
R6042		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	1	
R6043		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R6044		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R6045		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R6046		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6047		ERJ2GEJ394	M.RESISTOR CH 2W 390K	1	
R6048		ERJ2GEJ333	M.RESISTOR CH 2W 33K	1	
R6052		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R6053		ERJ2GEJ393	M.RESISTOR CH 2W 39K	1	
R6054		ERJ2GEJ334	M.RESISTOR CH 2W 330K	1	
R6055		ERJ8GEYJ821	M.RESISTOR CH 1/8W 820	1	
R6057,58		ERJ2GEJ473	M.RESISTOR CH 2W 47K	2	
R6060-62		ERJ2GEJ102	M.RESISTOR CH 2W 1K	3	
R6063		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R6064,65		ERJ2GEJ473	M.RESISTOR CH 2W 47K	2	
R6069		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R6070		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6072		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R6073		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R6074		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R6075		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R6076		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R6078		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R6079		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R6080		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6081		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R6082		ERJ2GEJ224	M.RESISTOR CH 2W 220K	1	
R6083		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R6084		ERJ2GEJ105	M.RESISTOR CH 2W 1M	1	
R6086,87		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R6088		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R6090		ERJ8GEYJ100	M.RESISTOR CH 1/8W 10	1	
R6091		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R6092		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	1	
R6102-05		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	4	
R6106-09		ERJ2GEJ104	M.RESISTOR CH 2W 100K	4	
R6111-15		ERJ2GEJ104	M.RESISTOR CH 2W 100K	5	
R6116-19		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	4	
R6120		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R6121		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R6123		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6125		ERJ2GEJ683	M.RESISTOR CH 2W 68K	1	
R6127		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6128		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R6129		ERJ2GEJ333	M.RESISTOR CH 2W 33K	1	
R6130		ERJ2GEJ104	M.RESISTOR CH 2W 100K	1	
R6131		ERJ2GEJ105	M.RESISTOR CH 2W 1M	1	
R6132		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	
R6133-36		ERJ2GEJ104	M.RESISTOR CH 2W 100K	4	
R6137		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R6140		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R6142		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R6143		ERJ2GEJ182	M.RESISTOR CH 2W 1.8K	1	
R6144		ERJ2GEJ562	M.RESISTOR CH 2W 5.6K	1	
R6149		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R6201,02		ERJ2GEJ104	M.RESISTOR CH 2W 100K	2	
R6203		ERJ2GEJ682	M.RESISTOR CH 2W 6.8K	1	
R6204		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R6205		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R6206		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R6207		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R6208,09		ERJ2GEJ473	M.RESISTOR CH 2W 47K	2	
R6210		ERJ2GEJ104	M.RESISTOR CH 2W 100K	1	
R6212,13		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	2	
R6215		ERJ3GEYJ121	M.RESISTOR CH 1/16W 120	1	
R6217		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R6218		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R6221		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R8002		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R8003		ERJ2GEJ823	M.RESISTOR CH 2W 82K	1	
R8004		ERJ2GEJ681	M.RESISTOR CH 2W 680	1	
R8005-07		ERJ2GEJ102	M.RESISTOR CH 2W 1K	3	
R8008		ERJ2GEJ273	M.RESISTOR CH 2W 27K	1	
R8009		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R8011		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R8012,13		ERJ2GEJ223	M.RESISTOR CH 2W 22K	2	
R8014		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R8015		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R8016,17		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R8018		ERJ2GEJ561	M.RESISTOR CH 2W 560	1	
R8019,20		ERJ2GEJ123	M.RESISTOR CH 2W 12K	2	
R8021		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R8022		ERJ2GEJ105	M.RESISTOR CH 2W 1M	1	
R8023		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R8024		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R8025,26		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R8027		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R8028,29		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	2	
R8030		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R8031,32		ERJ2GEJ104	M.RESISTOR CH 2W 100K	2	
R8033		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R8034		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R8036		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R8037-39		ERJ2GEJ103	M.RESISTOR CH 2W 10K	3	
R8040		ERJ6GEYJ225	M.RESISTOR CH 1/10W 2.2M	1	
R8041		ERJ2GEJ153	M.RESISTOR CH 2W 15K	1	
R8042		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R8043		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R8045		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R8046		ERJ2GEJ821	M.RESISTOR CH 2W 820	1	
R8047		ERJ2GEJ153	M.RESISTOR CH 2W 15K	1	
R8048		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R8049		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R8050		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R8051		ERJ2GEJ561	M.RESISTOR CH 2W 560	1	
R8055		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R8056		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R8058		ERJ2GE0R00	M.RESISTOR CH 2W 0	1	
R8059,60		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R8061		ERJ2GEJ683	M.RESISTOR CH 2W 68K	1	
R8063		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R8064		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R8065		ERJ2GEJ683	M.RESISTOR CH 2W 68K	1	
R8067		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R8068,69		ERJ2GEJ682	M.RESISTOR CH 2W 6.8K	2	
R8070		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R8071		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R8072		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R8074		ERJ2GEJ273	M.RESISTOR CH 2W 27K	1	
R8075		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R8076		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R8078,79		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	2	
R8081		ERJ2GEJ154	M.RESISTOR CH 2W 150K	1	
R8082		ERJ2GEJ183	M.RESISTOR CH 2W 18K	1	
R8083		ERJ3GEYJ184	M.RESISTOR CH 1/16W 180K	1	
R8090		ERJ2GEJ473	M.RESISTOR CH 2W 47K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			TRANSFORMERS		
T4001		EIQ6QB006	TRANSFORMER	1	
			VARIABLE RESISTORS		
VR3002		EVM7JSX30B23	V.RESISTOR 2K	1	
VR3102		EVM7JSX30B52	V.RESISTOR 5.2K	1	
VR3104		EVM7JSX30B23	V.RESISTOR 2K	1	
VR4001		EVM7JSX30B14	V.RESISTOR 10K	1	
VR4002		EVM7JSX30B54	V.RESISTOR 50K	1	
VR6001		EVM7JSX30B14	V.RESISTOR 10K	1	
VR6201		EVM7JSX30B15	V.RESISTOR 100K	1	
VR8001-03		EVM7JSX30B24	V.RESISTOR 20K	3	
VR8006		EVM7JSX30B24	V.RESISTOR 20K	1	
VR8007		EVM7JSX30B15	V.RESISTOR 100K	1	
VR8008		EVM7JSX30B14	V.RESISTOR 10K	1	
VR8010		EVM7JSX30B53	V.RESISTOR 5K	1	
VR8011,12		EVM7JSX30B24	V.RESISTOR 20K	2	
			CRYSTAL OSCILLATORS		
X6001		VSX0461		1	
X6002		VSX0439	CRYSTAL OSCILLATOR	1	
X6101		VSX0472		1	
X6102		VSX0510	CRYSTAL OSCILLATOR	1	
X8001		VSX0419	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VSC3342	H.A. SHIELD COVER (A)	1	
		VEK5804	H.A. SHIELD COVER UNIT	1	
	■	VEP02379B	DRIVE C.B.A.		(NIA)
			CAPACITORS		
C2001		ECUX1H152KBV	C.CAPACITOR CH 50V 1500P	1	
C2002		ECUM1C105KB	C.CAPACITOR CH 16V 1U	1	
C2003		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C2005		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C2006		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C2007		ECUM1C105KB	C.CAPACITOR CH 16V 1U	1	
C2008		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C2009,10		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	2	
C2011,12		ECUX1H561KBV	C.CAPACITOR CH 50V 560P	2	
C2013		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C2014		ECST1AY475Z	T.CAPACITOR CH 10V 4.7U	1	
C2015-18		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	4	
C2019		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C2020,21		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	2	
C2022-24		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	3	
C2025-27		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C2028		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C2029		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C2030		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	1	
C2032		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C2033		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C2034		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	1	
C2035		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C2036		ECUM1C105ZFN	C.CAPACITOR 16V 1U	1	
C2037		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C2038		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C2039		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C2042		ECUX1H332KBV	C.CAPACITOR CH 50V 3300P	1	
C2044		ECUM1E223KBV	C.CAPACITOR CH 25V 0.022U	1	
C2047		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C2049,50		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	2	
			DIODES		
D2001		MA143	DIODE	1	
			INTEGRATED CIRCUITS		
IC2001		AN3893FHP	IC	1	
IC2002		UN224		1	
IC2003		AN3890FBS	IC	1	
IC2004		UN224		1	
IC2005		RC4558M		1	
			CONNECTORS		
P2001		VJP3240C022	CONNECTOR (MALE)	1	
P2002		VJS2848D007	CONNECTOR (FEMALE)	1	
P2003		VJS2958D018	CONNECTOR (FEMALE)	1	
			COMBINATION PARTS		
QR2001		ON2170-LM		1	
QR2002		UN5210	TRANSISTOR	1	
QR2003		UN5111	TRANSISTOR-RESISTOR	1	
QR2004		UN5216		1	
QR2005		UN5215	TRANSISTOR-RESISTOR	1	
QR2006		UN5115	TRANSISTOR-RESISTOR	1	
QR2007		UN5215	TRANSISTOR-RESISTOR	1	
			RESISTORS		
R2001		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R2002		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R2003		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R2004		ERJ3GEYJ684	M.RESISTOR CH 1/16W 680K	1	
R2005		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R2006		ERJ8GEYJR33	M.RESISTOR CH 1/8W 0.33	1	
R2007		ERJ8GEYJ1R5	M.RESISTOR CH 1/8W 1.5	1	
R2008-10		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	3	
R2011		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R2012		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R2013		ERJ8GEYJR33	M.RESISTOR CH 1/8W 0.33	1	
R2014		ERJ8GEYJ3R3	M.RESISTOR CH 1/8W 3.3	1	
R2015		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R2016		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R2017		ERJ3GEYJ754	M.RESISTOR CH 1/16W 750K	1	
R2019,20		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	2	
R2021		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R2022		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R2023		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R2024		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R2025		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R2026		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R2028		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R2030,31		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	2	
R2032		ERJ6GEYJ271	M.RESISTOR CH 1/10W 270	1	
R2033		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R2034		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R2037		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R2039		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0	1	
R2042,43		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
R2049		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R2050		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R2051		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R2052		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R2053		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R2054		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R2055,56		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R2057		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
			MISCELLANEOUS		
		VMD1842	REEL SENSOR HOLDER	1	
		ON2170	REEL SENSOR	1	

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